

USSR

KOZLOV, E. S., et al., Zhurnal Obshchey Khimii, Vol XL, No 12, Dec 70, pp 2549-2552

It was found that with increase in the PNC angle, there is a shift in the resonance of the phosphorus atom, and an increase in the dipole moment, and in the bond order of the  $P = N$  bond.

UDC 547.558.1+546.185

USSR

ZHMUROVA, I. N., YURCHENKO, R. I., KUKHAR', V. P., PETRASHENKO, A. A., and  
KIRSANOV, A. V., Institute of Organic Chemistry, Acad. Sc., Ukrainian SSR

"Protonation of Triphenylphosphazobenzene"

Leningrad, Zhurnal Organicheskoy Khimii, Vol 7, No 5, May 71, pp 1027-1031

Abstract: 4-Triphenylphosphazobenzene (I) are protonated in alcoholic solution of 1N HCl principally at the triphenylphosphazo group. When the strength of hydrochloric acid is increased to the level of 3-6 N, the tautomeric equilibrium is shifted slightly towards the azo group salts. The differences in absorption maxima of (I) spectra taken in neutral and acid media (4N HCl) correlate with the  $\sigma^-$  constants of the 4'-position substituents. In comparison to 4-amino- and 4-dimethylaminoazobenzenes, the 4-triphenylphosphazobenzene are more basic by about 5-6 pKa units. Although accurate comparisons were not possible, the basicity constants of (I) type c compounds correlate with the  $\sigma^0$  and  $\sigma^-$  constants of the substituents on the 4-position.

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UDC 547.241

USSR

FESHCHENKO, N. G., MAZEPA, I. K., ZHILA, S. I., and KIRSANOV, A. V.,  
Institute of Organic Chemistry, Ukrainian Academy of Sciences

"Hexaalkyliodobiphosphonium Pentaiodides"

Leningrad, Zhurnal Obschey Khimii, Vol 41, No 11, Nov 1971, pp 2,375-2,378

Abstract: The highly reactive hexaalkyliodobiphosphonium pentadioxides (I), formed during alkylation of phosphorus diiodide or of red phosphorus in the presence of iodine, are not well known. The authors tested the reactions of compounds (I) with a number of substances: water, alcohols, phenetole, diisopropyl and dibutyl ethers, tetrahydrofuran, and tricyclohexylphosphine. It was concluded that compounds (I) are very reactive both toward electrophilic (sulfur) and with nucleophilic (metals, water, alcohols, trialkylphosphines) agents.

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UDC 546.185

USSR

KUKHAR', V. P., BOYKO, A. P., ZOLOTAREVA, L. A., and ~~KIRSANOV, A. V.~~,  
Institute of Organic Chemistry, Academy of Sciences, UkrSSR

"Trichlorophosphazoperchloroethane in the Friedel-Crafts Reaction"

Leningrad, Zhurnal Obshchey Khimii, Vol 42(103), No 2, Feb 72, pp 281-283

Abstract: The authors study the catalytic activity of Lewis acids in the Friedel-Crafts reaction. In the reaction of trichlorophosphazoperchloroethane with benzene, the catalytic activity of Lewis salts decreases in the order  $\text{SbCl}_5 > \text{AlCl}_3 > \text{FeCl}_3 > \text{SnCl}_4 > \text{TiCl}_4$ . In the case of toluene, the reaction proceeds somewhat more readily in the presence of  $\text{SbCl}_5$ , while chlorobenzene reacts less readily than benzene with this catalyst. The reaction of trichlorophosphazoperchloroethane with other organic solvents in the presence of Lewis acids leads to resin formation and difficulty in isolating the corresponding trichloromethylketones. N-Dichlorophosphonyliminotrichloroacetyl chloride reacts much more slowly with benzene in the presence of antimony pentachloride than does trichlorophosphazoperchloroethane with a much lower yield of trichloroacetophenone.

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UDC 546.183

USSR

FESHCHENKO, N. G., GORBATENKO, Zh. T., KOVALEVA, T. V., and KIRSANOV, A. V.,  
Institute of Organic Chemistry, Academy of Sciences of the UkrSSR

"Iodides of Phosphorus. IV. Reaction of Phosphorus Triiodide With Organic  
Sulfides and Tertiary Amines"

Leningrad, Zhurnal Obshchey Khimii, Vol 42(103), No 2, Feb 72, pp 284-287

Abstract: An investigation of the reaction between phosphorus triiodide, organic sulfides and tertiary amines shows that equilibrium conversion of the triiodide to the diiodide takes place when phosphorus triiodide is treated with dialkyl sulfides or thiophane. Because of their low basicity, dibenzyl sulfide and diphenyl sulfide do not convert the triiodide to the diiodide. When phosphorus triiodide reacts with tertiary amines, polymers with a low iodine content are formed. Treatment of the triiodide with pyridine produces the diiodide and a complex comprised of two molecules of pyridine and one molecule of phosphorus triiodide. Aryldiiodophosphines react with triethylamine in a 1:1 ratio to form an almost quantitative yield of diaryldiiodobiphosphines. Cyclic polyarylcyclopolyphosphines are produced by the reaction of aryldiiodophosphines and diaryldiiodobiphosphines with excess triethylamine.

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UDC 547.558.1

USSR

FESHCHENKO, N. G., KOVALEVA, T. V., and KIRSANOV, A. V., Institute of Organic Chemistry, Academy of Sciences of the UkrSSR

"Iodides of Phosphorus. V. Chemical Properties of Aryldiiodophosphines and Diaryldiiodobiphosphines"

Leningrad, Zhurnal Obshchey Khimii, Vol 42(103), No 2, Feb 72, pp 287-290

Abstract: A study of the chemical properties of aryldiiodophosphines and diaryldiiodobiphosphines shows that both types of compounds react equally readily with electrophilic and nucleophilic agents. Diaryldiiodobiphosphines react with sulfur either producing compounds of a new type -- diaryldiiodobiphosphine disulfides -- or by breaking the P-P bond and forming dithiophosphonic acid anhydride, depending on the conditions under which the reaction is carried out. In boiling benzene, aryldiiodophosphines take up 2 gram-atoms of sulfur and eliminate a mole of iodine molecule. Aryltetraiodophosphorans appear to have the structure of aryltriiodophosphonium iodides. Diphenyldiiodobiphosphine reacts with piperidine with rupture of the P-P bond and formation of the dipiperidide of phenylphosphorous acid. When heated above 230°C, diaryldiiodophosphines decompose with the formation of aryldiiodophosphine and an arylphosphorus polymer.

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UDC 547.241

USSR

KOZLOV, E. S., SEDLOV, A. I., and KIRSANOV, A. V., Institute of Organic Chemistry, Academy of Sciences of the Ukrainian SSR

"Some Conversions of 1-Phospha-3,5-dioxa-4-arylbicyclo[2,2,1]-heptanes and Their Derivatives"

Leningrad, Zhurnal Obshchey Khimii, Vol 42(104), No 3, Mar 72, pp 519-522

Abstract: Reaction of 1-phospha-3,5-dioxa-4-arylbicyclo[2,2,1]heptanes with sulfur produces 1-hydroxymethyl-1-thio-4-aryl-1-phospha-3-oxacyclopentenes-4. Treating 1-hydroxymethyl-1-oxo-1-phospha-3-oxacyclopentenes-4 with excess chlorine gives oxides of 1-phospha-3,5-dioxa-4-aryl-7,7-dichlorobicyclo[2,2,1] heptanes.

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UDC 546.185

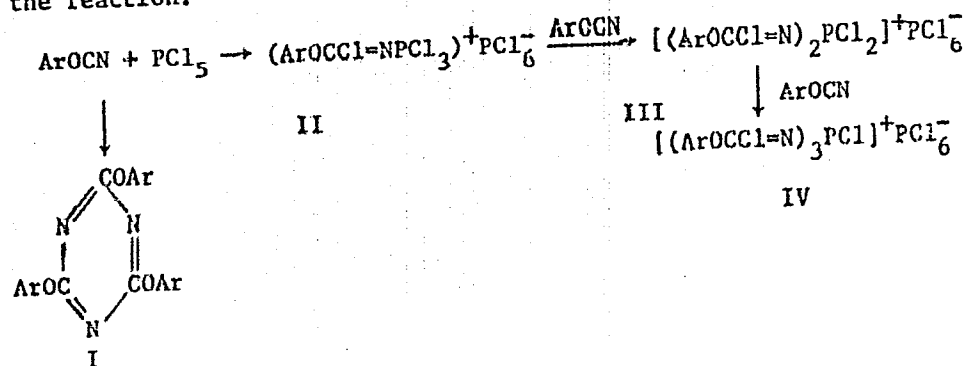
USSR

SHEVCHENKO, V. I., KULIBABA, N. K., KIRSANOV, A. V.

"Phosphorylation of Aromatic Cyanates"

Leningrad, Zhurnal Obshchey Khimii, Vol XLII (CIV), No 1, 1972, pp 102-105

Abstract: The interaction of cyanates with phosphorus pentachlorides does not stop in the stage of formation of hexachlorophosphorates (III) but proceeds farther with the formation of hexachlorophosphorates of tris-N-(aroxychloromethylenimino)monochlorophosphoniums (IV) which are also the final products of the reaction:



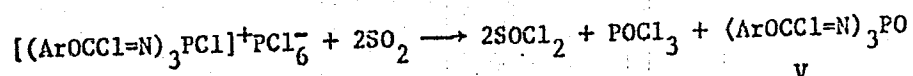
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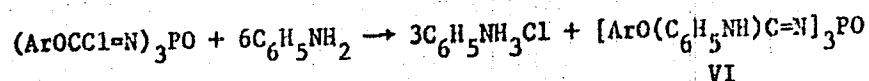
USSR

SHEVCHENKO, V. I., et al., Zhurnal Obshchey Khimii, Vol XLII (CIV), No 1, 1972, pp 102-105

The aromatic cyanates react with phosphorus pentachloride with a mole ratio of 1.5:1 or with excess cyanate with the formation of (IV). The latter react easily with sulfur dioxide with the formation of tris-N-N(aroxychloromethylene)triamides of phosphoric acid (V):



On interaction of (V) with analine, tris-N-(aroxyphenylaminomethylene) triamides of phosphoric acid (VI) are formed:



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UDC 546.185

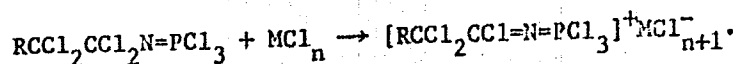
USSR

KUKHAR', V. P., SEMENIY, V. YA., KIRSANOV, A. V.

"Complexes of Trichlorophosphazopolychloroalkanes with Lewis Acids"

Leningrad, Zhurnal Obshchey Khimii, Vol XLII (CIV), No 1, 1972, pp 98-102

Abstract: Trichlorophosphazotetrachloroalkanes react easily with Lewis acids to form crystalline salt-like complexes (I) which were isolated in the individual state:



The yields, formulas and some physical characteristics of the compounds are presented. In the infrared spectra of the (I) complexes there is an intense absorption band in the 1630-1700  $\text{cm}^{-1}$  range belonging to the C=N= bond vibrations [Z. Arnold, Coll. Czech. Chem. Commun., No 27, 2887, 1962]. The (I) complexes are strong electrophilic agents, and they react easily with various organic compounds -- hydrocarbons, aldehydes, ketones, simple and complex esters, nitriles, nitroalkanes, and so on. Structures are proposed to explain the chemical and spectral properties of these complexes.

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USSR

UDC 546.185

KULIBABA, N. K., SHEVCHENKO, V. I., and KIRSANOV, A. V., Institute of Organic Chemistry, Academy of Sciences Ukrainian SSR

"Reaction of Butyl Cyanates With Phosphorus Pentachloride"

Leningrad, Zhurnal Obshchey Khimii, Sep 71, Vol 41, No 9, pp 2105-2106

Abstract: Use was made of the relatively stable butyl- and isobutyl cyanates to study the reaction of aliphatic cyanates with phosphorus pentachloride. Unlike aromatic cyanates, butyl cyanates react with phosphorus pentachloride not only at the nitrile group but also at the Alk-O bond to form tetrachlorophosphorus isocyanate (I) and butoxychloromethyleneiminotrichlorophosphonium hexachlorophosphates (II). I is a viscous liquid which decomposes on distillation under vacuum. It may be converted to isocyanatophosphoric diacid chloride (III) which is assumed to be the pure form of I. The hexachlorophosphate (II,  $R=C_4H_9$ ) is a crystalline light yellow substance, readily soluble in methylene chloride, dichloroethane, and is insoluble in ether,  $CCl_4$  and hexane. Hexachlorophosphate with an isobutyl radical is a viscous liquid which decomposes on distillation under vacuum. It can be converted to N-(butoxychloromethyl)amidophosphoric diacid chlorides -- a colorless liquid which can be distilled in vacuum undecomposed.

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USSR

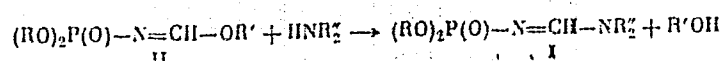
UDC 546.185

GUSAR', N. I., IVANOVA, Zh. M., KUKHAR', V. P., and KIRSANOV, A. V.,  
Institute of Organic Chemistry, Academy of Sciences Ukrainian SSR

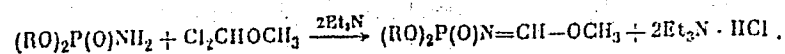
"N,N-Dialkyl-N'-Dialkoxyphosphonylformamidines"

Leningrad, Zhurnal Obshchey Khimii, Sep 71, Vol 41, No 9, pp 2107-2108

**Abstract:** N,N-Dialkyl-N'-dialkoxyphosphonylformamidines are readily obtained by treating N-dialkoxyphosphonyliminoformic acid esters with secondary amines at 0-5°C without a solvent



N-dialkoxyphosphonyliminoformic acid methyl ester (II,  $R'=CH_3$ ) was obtained in low yield from the 1,1-dichloromethyl ester and dialkylamidophosphate, in the presence of triethylamine in benzene.



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UDC 547.241

USSR

ZHURAVLEVA, L. P., SULEYMANOVA, M. G., KOVALYUKH, N. N., and KIRSANOV, A. V.:  
Institute of Organic Chemistry, Academy of Sciences Ukrainian SSR

"Dibenzylphosphinic Acid Derivatives"

Leningrad, Zhurnal Obshchey Khimii, Sep 71, Vol 41, No 9, pp 1950-1953

Abstract: A discussion is presented of a method suitable for obtaining oxides of tribenzylphosphines which, in turn, may be used to obtain a series of dibenzylphosphinic acids in good yields. When treated with phosphorus pentachloride or thionyl chloride, dibenzylphosphinic acids form acid chlorides which, when treated with ammonia and amines, form amides; when these acid chlorides are treated with alcohols and phenols (phenoxides), they form appropriate esters. The reaction of dibenzylphosphinic acid chloride with Grignard's reagents produces alkylidibenzylphosphine oxides or arylidibenzylphosphines. The fusion of alkylidibenzylphosphine oxides with alkalis yields alkylbenzylphosphinic acids -- crystalline compounds which may be titrated with phenolphthalein for monobasic acids. Tables are provided citing radicals, yields, melting points, formulas and other indicators for dibenzylphosphinic acid chlorides  $(\text{C}_6\text{H}_5\text{CH}_2)_2\text{P}(\text{O})\text{Cl}$ , dibenzylphosphinic acid amides  $(\text{C}_6\text{H}_5\text{CH}_2)_2\text{P}(\text{O})\text{NHR}'$  and oxides of alkylidibenzylphosphines and arylidibenzylphosphines  $(\text{C}_6\text{H}_5\text{CH}_2)_2\text{P}(\text{O})\text{Ra}$ .

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USSR

UDC: 547.341.07

FESHCHENKO, N. G., KOROL', A. I., KIRSANOV, A. V., Institute of Organic Chemistry, Academy of Sciences of the Ukrainian SSR

"A Method of Synthesizing Tri-(sec-octyl)-phosphine Oxide"

Moscow, Otkrytiya, izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, No 14, May 71, Author's Certificate No 301337, Division C, filed 24 Feb 70, published 21 Apr 71, p 67

Translation: This Author's Certificate introduces: 1. A method of synthesizing tri-(sec-octyl)-phosphine oxide. As a distinguishing feature of the patent, secondary octyl iodide is treated with phosphorus in the presence of a catalytic quantity of iodine with heating, followed by treating the resultant product with an alkali such as sodium hydroxide, and with sodium sulfite, and isolating the product by conventional methods. 2. A modification of this method is distinguished by heating to 210°C.

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UDC 547.419.1

USSR

ZHMUROVA, I. N., MARTYNYUK, A. P., and KIRSANOV, A. V., Institute of Organic Chemistry, Acad. Sc., Ukrainian SSR

"Triphenylphosphazophenols"

Leningrad, Zhurnal Obshchey Khimii, Vol 41 (103), No 4, Apr 71, pp 782-784

Abstract: Reaction of triphenylphosphine (I) with azidophenols yields triphenylphosphazophenols. To a solution of 0.01 g-mole of azidophenol in 15-20 ml benzene a solution of 0.01 g-mole of (I) in 10 ml benzene was gradually added. The product either precipitated at the completion of the reaction or after removal of the solvent followed by treatment with ethanol. These compounds are stable to cold water and dilute mineral acids but are easily hydrolyzed with bases. Triphenylphosphazophenols are stronger bases than the corresponding aminophenols. In a solution of glacial acetic acid o- and p-quinoneazides are converted to diazonium acetates which, when treated with sodium azide, yield azidophenols.

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UDC 547.419.1

USSR

ZHMUROVA, I. N., YURCHENKO, R. I., and KIRSANOV, A. V., Institute of Organic Chemistry, Acad. Sc. Ukrainian SSR

"Auxochromic Action of the Phosphazo Group. V"

Leningrad, Zhurnal Obshchey Khimii, Vol 41 (103), No 4, Apr 71, pp 778-781

Abstract: The reaction of triphenylphosphine with 4-azidoazobenzene or that of 4-aminoazobenzene with triphenyldibromophosphorus yields 4-triphenylphosphazoazobenzenes  $p-(C_6H_5)_3P:NC_6H_4N:NC_6H_4X-p$ ; X, m.p. given: H, 174-176°; Cl, 174-176°; F, 175-177°;  $2'NO_2$ , 141.5-142.5°;  $NO_2$ , 203-205°; OH, 221-223°;  $OCH_3$ , 167-169°;  $N(CH_3)_2$ , 225-227°;  $N:P(C_6H_5)_3$ , 272-273°; and  $CH_3$ , 167-168°. In these compounds the triphenylphosphazo group has a definite effect on the color, similar to the effect of the dimethylamine group in 4-dimethylaminoazobenzenes. The reaction of sodium azide with diazo-4-aminoazobenzene or 4,4'-diaminoazobenzene gave the corresponding 4-azido and 4,4'-diazidoazobenzenes  $p-N_3C_6H_4N:NC_6H_4X-p$ ; X and m.p. given:  $2'NO_2$ , 112-114°;  $NO_2$ , 131-132°; OH, 125-127°;  $N(CH_3)_2$ , 128-130°; and  $N_3$ , 139-141° (d).

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UDC 547.558.1

USSR

ZHMUROVA, I. N., TUKHAR', A. A., and KIRSANOV, A. V., Institute of Organic Chemistry, Acad. Sc. Ukrainian SSR

"Triphenylphosphazoanilines"

Leningrad, Zhurnal Obshchey Khimii, Vol 41 (103), No 4, Apr 71, pp 785-791

Abstract: Triphenylphosphazoanilines (I) -- usually light yellow crystalline compounds -- are obtained through oxidative imine formation, by treating triphenylphosphine with azidoanilines. They are stable in air, give picrates with picric acid and dissolve in dilute mineral acids without decomposition. Hot mineral acids and bases hydrolyze (I) to corresponding phenylenediamines. p-Triphenylphosphazoaniline reacts with aromatic aldehydes and sodium nitrite yielding triphenylphosphine oxides and diaryliden-p-phenylenediamine. Arylidene-p-triphenylphosphazoanilines containing no dimethylamine groups in the arylidene ring were obtained from azidoanilines converted to arylideneazidoanilines, which then were condensed with triphenylphosphine.

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USSR

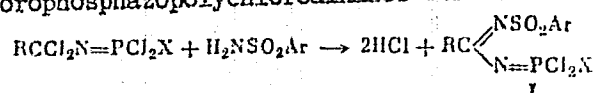
UDC 547.491+546:181

BODNARCHUK, N. D., SEMENYI, V. Ya., KUKHAR', V. P. and KIRSANOV, A. V., Institute of Organic Chemistry, Ukrainian Academy of Science SSR

"Phenyldichlorophosphazopolychloroalkanes"

Leningrad, Zhurnal Obshchey Khimii, Vol 41, No 5, May 1971, pp 984-988

Abstract: Phenyldichlorophosphine was treated with aliphatic nitriles and chlorinated to saturation, to give phenyldichlorophosphazo-1,1,2,2-tetrachloroalkanes. These reactions proceed simultaneously and the products readily hydrolyze, react with amines, alcohols, and phenols. In a further reaction sequence, the phenyldichlorophosphazopolychloroalkanes were treated with arenesulfamide.



X = Cl, Ph.

This reaction proceeds slowly in the temperature range of 110-130°. The product is easily hydrolyzed, reacts with alcohols, amines and phenols to form phenyldichlorophosphazo-N-arylesulfonyliminopolychloro acyl compounds.

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UDC 547.241

USSR

KOZLOV, E. S., SEDLOV, A. I., KIRSANOV, A. V., Institute of Organic Chemistry, Kiev, Academy of Sciences Ukrainian SSR

"Oxidation of 1-Phospha-3,5-dioxa-4-arylbicyclo [2,2,1]-heptanes"

Leningrad, Zhurnal Obshchey Khimii, Vol 40, No 8, Aug 70, pp 1673-1677

**Abstract:** Oxidation of 1-phospha-3,5-dioxa-4-arylbicyclo-[2,2,1]-heptanes (I) with HgO at 20° gives the corresponding phosphine oxides (II), which by heating can easily be rearranged to 1-hydroxymethyl-1-oxo-4-aryl-1-phospha-3-oxacyclopentanes. Reacting (II) with benzyl chloride gives the corresponding benzoyl derivatives. The oxides (II) are not very stable except for those with electronegative substituents at the phenyl ring. This instability is probably due to the stress of the bicyclic ring system.

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USSR

UDC 547.558.1

SHTEPANEK, A. S., TKACHENKO, YE. N., KIRSANOV, A. V., Institute of Organic Chemistry, Kiev, Academy of Sciences Ukrainian SSR

"p-Phenylenebisphosphazo Compounds. II"

Leningrad, Zhurnal Obshchey Khimii, Vol 40, No 8, Aug 70, pp 1677-1680

**Abstract:** Tetraphenyl-p-phenylenebisphosphine reacts with hydrazoic acid yielding hydrazoates of tetraphenyl-p-phenylenebisphosphazohydride which, when reacted with sodium amide, is converted to tetraphenyl-p-phenylenebisphosphazohydride. The latter is a strong base, stronger than triethylamine by 3-4 orders of magnitude, and is easily hydrolyzed with water. Tetraphenyl-p-phenylenebisphosphazohydride reacted with trichloroacetonitrile or with phenylacetate forms tetraphenyl-p-phenylenebisphosphazotrichloroiminoacetyl and tetraphenyl-p-phenylenebisphosphazonitrile. Tetraphenyl-p-phenylenebisphosphine reacted with diethyl ester of N-chloromino-carbonic acid yields a diethylester of tetraphenyl-p-phenylenebisphosphazocarbonic acid, and with benzoyl azide it gives tetraphenyl-p-phenylenebisphosphazobenzoyl.

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USSR

UDC 547.24'

Z'OLA, M. I., ZHURAVLEVA, L. P., KIRSANOV, A. V.

"Reactions of Tertiary Phosphine Oxides With Phosphorus Pentachloride"

Leningrad, Zhurnal Obshchey Khimii, Vol 40, No 9, Sep 70, pp 1937-1942

Abstract: Reaction of stoichiometric amounts or of a double excess of phosphorus pentachloride with trisarylmethylphosphines in benzene or carbon tetrachloride solution yields only trisarylmethylphosphine dichlorides without any hexachlorophosphorates. Phosphorus pentachloride reacts with triscyclohexylmethylphosphine yielding the corresponding dichloride and hexachlorophosphate of triscyclohexylmethylphosphonium chloride, which forms a crystal solvate with carbon tetrachloride. The dichlorides obtained can be converted to thiooxides by treatment with hydrogen sulfide and to the corresponding phosphazo compounds by the reaction with sulfoacid-N-dichloroamides. Thermal decomposition of tribenzylphosphine dichloride yields dibenzylchlorophosphine, which gives addition products with alkyl halides. These addition products can be hydrolyzed 1/1 to the alkylidibenzylphosphine oxides.

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USSR

UDC 547.247

DERKACH, N. Y., KIRSAKOV, A. V., Institute of Organic Chemistry, Academy of Sciences, Ukrainian SSR

"Reaction of 5-Phosphaspiro[4,4]nonene-4, 5 with Carbonyl Compounds"

Leningrad, Zhurnal Obshchei Khimii, Vol 40, No 6, Jun 70, pp 1424-1425

Abstract: All attempts to isolate the title compound (the ylid of phosphaspirononane), which must be formed as a result of the action of hydrogen halide acceptors (triethylamine, potassium tert-butoxide, lithium or sodium hydride, ethylene oxide) on the iodide or bromide of 5-phosphaniumspiro[4,4]nonane gave unsatisfactory results. It could be shown, however, that the ylid is formed when sodium hydride acts on phosphaspirononane in dimethyl sulfoxide solution. The reaction was run in the presence of carbonyl compounds, which react with the ylid to form the corresponding phosphine oxides. The phosphine oxides of 1-(5,5-diphenylpenten-4-yl)phospholane, 1-(5-phenylhexen-4-yl)phospholane, 1-(5-phenylhexen-4-yl) phospholane, and 1-(5-p-nitrophenylpenten-4-yl)-phospholane were prepared.

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USSR

UDC: 546.185

KUKHAR', V. P., SEMENY, V. Ya., KIRSANOV, A. V., Institute of Organic Chemistry, Academy of Sciences of the Ukrainian SSR

"Interaction of Trichlorophosphazoperchloroethane With Amides of Carboxylic Acids"

Leningrad, Zhurnal Obshchey Khimii, Vol 40 (102), No 11, Nov 70, pp 2382-2385

Abstract: The interaction of trichlorophosphazoperchloroethane (I) with amides of carboxylic acids was studied by reacting (I) with acetamide (II). Interaction at a 1:1 molar ratio did not produce the expected N-acetyltrichlorophosphazoiminotrichloroacetyl (III). Instead, the acetamide dehydrated to acetonitrile, and products of hydrolysis or acidolysis of (I) formed -- N-dichlorophosphonyliminotrichloroacetyl chloride (IV) and N-dichlorophosphonyltrichloroacetamide (V) in a ratio of approximately 2:1. When (I) interacted with acetamide in a molar ratio of 1:2, the yield of compound (V) was 75-80%, while the nitrile yield remained unchanged. Reaction in a 1:3 ratio reduces the yield of (V) somewhat (to 50-60%); however, trichloroacetamide was isolated from the final products with a yield of 10-15%. When the components were taken in 1:4 ratio the basic products of the reaction were acetonitrile and trichlo-

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USSR

KUKHAR', V. P., et al., Zhurnal Obshchey Khimii, Vol 40 (102), No 11, Nov 70, pp 2382-2385

roacetamide. In the last two cases, the reaction was accompanied by precipitation of a resinous substance soluble in water with a strongly acid reaction, and apparently consists of a mixture of phosphoric and amidophosphoric acids. It was found that carboxylic acid amides with electron-acceptor substituents react somewhat more slowly than amides with electron-donor substituents.



USSR

UDC: 547.241

FESHCHENKO, N. G., KOVAL', A. A., KIRSANOV, A. V., Institute of Organic Chemistry, Academy of Sciences of the Ukrainian SSR

"Alkyl-Chloride and Alkyl-Bromide Alkylation of Red Phosphorus"

Leningrad, Zhurnal Obshchey Khimii, Vol 40 (102), No 11, Nov 70, pp 2385-2387

Abstract: The authors investigate the reaction of octyl and decyl chlorides, and of hexyl, octyl, decyl and dodecyl bromides with red phosphorus in the presence of iodine. Tertiary phosphine oxides, and phosphinic and phosphonic acids are isolated after treating the reaction products with alkali. The basic reaction products are tertiary phosphine oxides. The situation is reversed by adding phosphoric acid to the reagents, which makes phosphinic and phosphonic acids the basic reaction products with a reduction in oxide yield to 5-15%. Thus the alkylation reaction can be used to synthesize both tertiary phosphine oxides and phosphinic and phosphonic acids.

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USSR

UDC 547.26'118.07

SHOKOL, V. A., MIKHAYLYUCHENKO, N. K., DERKACH, G. I., KIRSANOV, A. V., Institute of Organic Chemistry, Kiev, Academy of Sciences Ukrainian SSR

"A Method of Producing trichlorophosphazo Compounds"

Moscow, Otkrytiya, Izobreteniya, Promyshlennyye Obraztsy, Tovarnyye Znaki, No 18, Author's Certificate No 271520, filed 18 Mar 69, p 24

Abstract: This Author's Certificate introduces: 1. A method of producing trichlorophosphazo compounds by interacting an amine or amide with a phosphorus-containing reagent and chlorine in an organic solvent in the presence of heat with subsequent isolation of the goal product by conventional methods. As a distinguishing feature of the patent, the process is simplified by using red or white phosphorus as the phosphorus-containing component. 2. The method described in (1) is distinguished by the fact that the process is carried out at 50-80°C.

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USSR

UDC 546.183

FESHCHENKO, N. G., GORBATENKO, Zh. K., and KIRSANOV, A. V., Institute of Organic Chemistry, Academy of Sciences Ukrainian SSR

"Phosphorus Iodides. III. Reaction of Phosphorus Triiodide With Esters"

Leningrad, Zhurnal Obshchey Khimii, Vol 41 (103), No 3, Mar 71, pp 551-554

Abstract: Simple dialkyl esters react with phosphorus triiodide in an equilibrium type reaction to give phosphorus diiodide. At 20° diphenyl ether and anisol convert phosphorus triiodide to the diiodide only to the extent of 1-3% regardless of the reaction time, probably because of low nucleophilicity. Phenetol, dibenzyl ether, and tetrahydrofurane react with phosphorus triiodide both at 20° and 100° forming phosphorus diiodide and alkyl iodides derived from split ethers. This reaction may be used as a preparative method for benzyl iodide and 1,4-diiodobutane. Prolonged heating in vacuum leads to the interconversion of  $PI_3$  and  $P_2I_4$ , producing iodine and various byproducts with lower iodine content.

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Acc. Nr

AP0041852

Abstracting Service:  
CHEMICAL ABST.

Ref. Code

WR 0366

89921h Benzal iodide. Feshchenko, N. G.; Kondratenko, N. V.; Vagupol'skii, L. M.; Kirsanov, A. V. Inst. Org. Khim., Kiev, USSR). Zh. Org. Khim. 1970, 6(1), 101 (Russ). Refluxing a mixt. of PhCHO and  $P_2I_4$  in  $C_6H_6$  gave PhCHI<sub>2</sub>. Similarly, 3-FC<sub>6</sub>H<sub>4</sub>CHI<sub>2</sub> and 4-FC<sub>6</sub>H<sub>4</sub>CHI<sub>2</sub> were prepd. The compds. decomp. rapidly in storage. Heating PhCHI<sub>2</sub> with 4-ONC<sub>6</sub>H<sub>4</sub>NHNH<sub>2</sub> gave PhCH:NNC<sub>6</sub>H<sub>4</sub>NO<sub>2</sub>. CPJR

REEL/FRAME

19751733

7

USSR

UDC: 546.185

FESHCHENKO, N. G., KOVALEVA, T. V., and KIRSANOV, A. V., Institute of Organic Chemistry, Kiev, Academy of Sciences Ukrainian SSR

"Dialkyl Amidotetraiodophosphorus Compounds"

Leningrad, Zhurnal Obshchey Khimii, Vol 40, No 2, Feb 70, p 500

Abstract: Lithium iodide reacts with dialkylamidodichlorophosphines to give previously unknown dialkyl amidotetraiodophosphorus compounds and lithium chloride-tetraalkyldiamidodiiodobiphosphine complexes.

1/1

USSR

K UDC 547.558.1

ZHMUROVA, I. N., YURCHENKO, R. I., and KIRSANOV, A. V., Institute of Organic Chemistry, Academy of Sciences Ukrainian SSR

"Auxochromic Action of Phosphazo Group. III"

Leningrad, Zhurnal Obshchey Khimii, Vol 40, No 5, May 70, pp 982-986

Abstract: The condensation of p-triphenylphosphazobenzaldehyde or p-triphenylphosphazobenzalaniline with quaternary salts of nitrogen heterocycles, 1-phenyl-3-methyl-5-pyrazolone and N-ethylrhodanine gives salt-like or intraionoid dyes. The auxochromic action of the phosphazo group in these dyes resembles the action of the classical auxochrome -- the dimethylamino group.

1/1

USSR

K UDC 547.558.1

ZHMUROVA, I. N., TUKHAR', A. A., and KIRSANOV, A. V., Institute of Organic Chemistry, Academy of Sciences Ukrainian SSR

"Phosphazoaldehydes and Phosphazoketones. II"

Leningrad, Zhurnal Obshchey Khimii, Vol 40, No 5, May 70, pp 986-991

Abstract: The interaction of azidoketone oximes and p-azidobenzylideneanilines with triphenylphosphine gives triphenylphosphazoketone oximes and p-triphenylphosphazobenzylideneanilines. The synthesis of phosphazoketone oximes and p-triphenylphosphazobenzylideneanilines directly from p-triphenylphosphazobenzaldehyde and phosphazoketones is complicated by side reactions on the phosphazo group.

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- 53 -

USSR

UDC 547.572 : 547.241

FEDOROVA, G. K., SHATURSKIY, YA. P., MOSKALEVSKAYA, L. S., and  
KIRSANOV, A. V., Institute of Organic Chemistry, Academy of Sciences  
~~Ukrainian SSR~~

"Synthesis of  $\beta$ -Ketophosphinic Acids"

Leningrad, Zhurnal Obshchey Khimii, Vol 40, No 5, May 70, pp 1167-1168

Abstract: Phosphorylation of  $\alpha$ -methoxystyrene with phosphorus pentachloride, phenyl- and styryltetrachlorophosphorus, with subsequent treatment of the primary reaction products with water, gives phenacylphosphonic acid and phenacylphenyl- and phenacylstyrylphosphinic acids. The product of the reaction of  $\alpha$ -methoxystyrene with phosphorus pentachloride when treated with sulfur dioxide is converted into  $\beta$ -methoxystyrylphosphonic acid dichloride, which also gives phenacylphosphonic acid on hydrolysis with water.

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- 55 -



1/2 015 UNCLASSIFIED  
TITLE--DIALKYLAMIDOTETRAIODOPHOSPHORANES -U-

PROCESSING DATE--02OCT70

AUTHOR--(C3)-FESHCHENKO, N.G., KOVALEVA, T.V., KIRSANDV, A.V.

COUNTRY OF INFO--USSR

SOURCE--AH. OBSHCH. KHIM. 1970, 40(2) 500

DATE PUBLISHED-----70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--IODINATED ORGANIC COMPOUND, ORGANIC PHOSPHORUS COMPOUND,  
LITHIUM COMPOUND, ORGANIC NITROGEN COMPOUND

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED  
PROXY REFL/FRAME--1992/1571

STEP NO--UR/0079/70/040/002/0500/0500

CIRC ACCESSION NO--AP0112565

UNCLASSIFIED

2/2 015

UNCLASSIFIED

PROCESSING DATE--02JCT70

CIRC ACCESSION NJ--AP0112565

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. REACTION OF LII WITH R SUB2 NPCL SUB2 GAVE NOT THE EXPECTED R SUB2 NPI SUB2, BUT PREVIOUSLY UNKNOWN R SUB2 NPI SUB4 (R EQUALS ME, M. 121-2DEGREES; R EQUALS ET, M. 104-5DEGREES) ALONG WITH (R SUB2 NPI) SUB2 .6LICL, WHICH WERE YELLOW SOLIDS, M. LARGER THAN 250DEGREES, SOL. ONLY IN H SUB2 O, AND SLOWLY DECOMPD. IN MOIST AIR. IN C SUB6 H SUB6 THESE ADDED 1 OR 3 MOLES IODINE TO FORM EITHER UP TO 90PERCENT (R SUB2 NPI SUB2) SUB2 .3.ICL OR 67PERCENT (R SUB2 NPI SUB4) SUB2 .3LICL, WHICH ARE BROWN SOLIDS, M. LARGER THAN 250DEGREES, AND DECOMPD. AND DISSOLVED IN H SUB2 O. EVIDENTLY THE ORIGINAL REACTION OF 3R SUB2 NPCL SUB2 WITH 6 LII YIELDS 6 LICL AND 3R SUB2 N-PI SUB2, WHICH DISPROPORTIONATE INTO THE 2 PRODUCT TYPES SHOWN OWING TO INCREASING NUCLEOPHILICITY OF P CAUSED BY THE R SUB2 N GROUP. R SUB2 NPI SUB4 ARE ORANGE SOLIDS, SOL. IN CCL SUB4 AND C. SUB6 H SUB6 ARE EASILY HYDROLYZED IN MOIST AIR; THEY CAN BE TITRATED, CONSUMING 5 EQUIVS. OF BASE.

UNCLASSIFIED

USSR

UDC 547.241

FESHCHENKO, N. G., IRODIONOVA, L. F., KOROL', O. I., and KIRSANOV, A. V., Institute of Organic Chemistry, Academy of Sciences Ukrainian SSR

"Alkylation of Phosphorus Diiodide and Red Phosphorus"

Leningrad, Zhurnal Obshchey Khimii, Vol 40, No 4, Apr 70, pp 773-776

Abstract: Lower alcohols (n-propyl, n-butyl, n-amyl and isoamyl) react with red phosphorus and iodine in a ratio of 1 : 1.2 : 3 at high temperatures (without pressure) much more rapidly than do the corresponding alkyl iodides with phosphorus diiodide or phosphorus and iodine. The reaction results in the formation (following decomposition of the reaction mixture with a solution of sodium hydroxide) of trialkylphosphine oxides and phosphinic or phosphonic acids. A study of the alkylation of phosphorus diiodide or a mixture of red phosphorus and iodine with alkyl iodides in the presence of phosphoric acid showed that the formation of acid products is due to the presence of the phosphoric acid, which not only changes the direction of the reaction, but also helps to speed it up.

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USSR

UDC: 547.558.1

SHTEPANUK, A.S., TKACHENKO, YE.N., and ~~KIRSANOV, A.V.~~, Institute of Organic Chemistry, Kiev, Academy of Sciences Ukrainian SSR

"Triphenylphosphazoinoacyl Derivatives"

Leningrad, Zhurnal Obshchey Khimii, Vol 40, No 4, Apr 70, pp 766-770

Abstract: Triphenylphosphazoinoacyls react with acid halides of various acids to give corresponding N-substituted triphenylphosphazoinoacyls. The latter react with triphenylphosphine to give N-triphenylphosphonium chlorides of triphenylphosphazoinoacyls and with potassium thiocyanate to give triphenylphosphazo-N-thiocyanogeniminoacyls. The basicity of the triphenylphosphazoinoacyls was measured by V. P. KUKHAR' and A. A. PETRASHENKO.

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USSR

UDC 546.183 : 547.2 2

FESHCHENKO, N. G., PISAREV, V. T., and KIRSANOV, A. V., Institute of Organic Chemistry, Academy of Sciences Ukrainian SSR

"Reaction of Phosphorous Acid With Iodine and Alcohols. II."

Leningrad, Zhurnal Obshchey Khimii, Vol 40, No 4, Apr 70, pp 770-773

Abstract: Secondary alcohols and glycols (except ethylene glycol) react with phosphorus and iodine or with phosphorous acid and iodine to give iodides with high yields. The reaction between tertiary alcohols and iodine takes two directions, viz. splitting off of water and formation of an unsaturated compound and formation of alkyl iodide. In the interaction of tertiary alcohols with red phosphorus and iodine dehydration of alcohols is almost completely suppressed by adding crystalline iodine to the alcohol-phosphorus mixture, with tertiary alkyl iodides being obtained in high yields.

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58

1/2 012 UNCLASSIFIED PROCESSING DATE--18SEP70  
TITLE--P,P',P,PHENYLENEBIS(P,P,DIPHENYLPHOSPHINE IMIDE) -U-  
AUTHOR-(03)-KIRSANOV, A.V., TKACHENKO, E.N., SHTEPANUK, A.S.  
COUNTRY OF INFO--USSR  
SOURCE--DOPOV. AKAD. NAUK UKR. RSR, SER. B. 1970, 32(1), 63-4  
DATE PUBLISHED-----70  
SUBJECT AREAS--CHEMISTRY  
TOPIC TAGS--ORGANIC PHOSPHORUS COMPOUND, IMIDE, BENZENE DERIVATIVE,  
COMPLEX COMPOUND  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRA--1985/1899 STEP NO--UR/0442/70/032/001/0063/0064  
CIRC ACCESSION NO--AT0101943

UNCLASSIFIED

2/2 012

UNCLASSIFIED

PROCESSING DATE--18SEP70

CIRC ACCESSION NO--AT0101943

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. P,PHENYLENEBIS(DIPHENYLPHOSPHINE)  
GAVE WITH 4 MOLES HN SUB3 (P,(H SUB2 NP PRIME POSITIVE PH SUB2) SUB2 C  
SUB6 H SUB4) (N SUB3 PRIME NEGATIVE) SUB2 WHICH REACTED WITH 2 MOLES  
NANH SUB2 IN LIQ. NH SUB3 TO GIVE THE TITLE COMPD., P,PH SUB2 P(:NH)C  
SUB6 H SUB4 P(:NH)PH SUB2 (I). ITS PK SUBA VALUES WERE DETD. IN AN AQ.  
SOLN. (15.26 AND 14.26) AND IN MEND SUB2 (22.58 AND 21.50). WITH H SUB2  
O, PHOCN, AND CCL SUB3 CN I GAVE P,(PH SUB2 P(O)) SUB2 C SUB6 H  
SUB4,P,(PH SUB2 P(:NCN)) SUB2 C SUB6 H SUB4, AND P,(CCL SUB3 C(:NH)N:PPH  
SUB2)SUB2 C SUB6 H SUB4, RESP. THE LAST WAS CONVERTED BY TERT,BUOCL TO  
P,(CCL SUB3 C(:NCL)N:PPH SUB2) SUB2 C SUB6 H SUB4.

UNCLASSIFIED

AM0033534

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Dmitriyev, A. Ya.; Denisov, V. P.; Timonin, A. A.; Yermilov, A. A.; Zhelyabin,  
B. I.; Grishin, E. Ya.; Kirsanov, A. V.; Polyakov, V. A.; Leonidov, I. L.

From Space Vehicles to Orbital Stations (Ot kosmicheskikh ko-  
rably k orbital'nykh stantsiyam) Moscow. Mashinostroyeniye.

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II	The Program of Piloted Vehicles "Vostok and Voskhod"	11
III	The Program of Piloted Vehicles "Soyuz"	19
IV	Main Flight Stages of the Vehicles "Soyuz"	43
V	The World's First Experimental Cosmic Station and Prospects of Orbital Flights	60

The book tells of the Soviet program for piloted flights and examines the  
main stages of development of Soviet Astronautics. Shown are prospects for  
the development of orbital stations.

19710047

12.



1/2 016 UNCLASSIFIED PROCESSING DATE--27NOV70  
TITLE--CORRELATION BETWEEN THE STRUCTURE AND THE ACTIVITY OF  
N,ACYLCHLORALIMINES -U-  
AUTHOR-(03)-DRACH, B.S., SINITSIA, A.D., KIRSANOV, A.V.  
COUNTRY OF INFO--USSR  
SOURCE--ZH. OSHCH. KHIM. 1970, 40(4), 934-5  
DATE PUBLISHED-----70  
SUBJECT AREAS--CHEMISTRY  
TOPIC TAGS--MOLECULAR STRUCTURE, ACYL RADICAL, CHLORINATED ORGANIC  
COMPOUND, IMINE, MERCAPTAN, ORGANIC PHOSPHORUS COMPOUND, CHEMICAL  
REACTION  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRAE--3006/1515 STEP NO--UR/0079/70/040/004/0934/0935  
CIRC ACCESSION NO--AP0135176

UNCLASSIFIED

2/2 016

UNCLASSIFIED

PROCESSING DATE--27NOV70

CIRC ACCESSION NO--AP0135176

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. ETSH REACTS WITH CCL SUB3 CH:NA IN DIOXANE IN A 2ND ORDER REACTION THAT MAY BE FOLLOWED IODOMETRICALLY; THE FOLLOWING RATE CONSTS. AT 20DEGREES WERE DETD. (K IN L./MOLE HR) FOR INDICATED A GROUPS: PHCH SUB2 CO, 226; ETCO, 77; ETO SUB2 C, 14.6; AND (ETO) SUB2 PO, 4.7. THE REACTION RATE DECLINES WITH REDN. OF ELECTRONEGATIVITY OF THE ACYL GROUP. IF THE REACTION SOLN. IS LEFT 1 DAY, EVAPN. GAVE CCL SUB3 CH(SET)NHR:PHCH SUB2 CO, M. 137-8DEGREES; ETCO, M. 103-4DEGREES; AND ETO SUB2 C, M. 78-9DEGREES. FACILITY: INST. ORG. KHIM., KIEV, USSR.

UNCLASSIFIED

1/3 G19 UNCLASSIFIED PROCESSING DATE--20NOV70  
TITLE--DERIVATIVES OF TRIPHENYLPHOSPHAZOIMINOACYLS --U--

AUTHOR--(C3)-SHEPANEK, A.S., TKACHENKO, YE.N., KIRSANOV, A.V.

COUNTRY OF INFO--USSR

SOURCE--ZH. OBSHCH. KHIM. 1970, 40(4), 766-70

DATE PUBLISHED-----70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--BENZENE DERIVATIVE, ORGANIC PHOSPHORUS COMPOUND, IMINE, AZO  
COMPOUND, CHLORINATED ORGANIC COMPOUND, FLUORINATED ORGANIC COMPOUND,  
CHEMICAL SYNTHESIS

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRA--3002/1185

STEP NO--UR/0079/70/040/004/0766/0770

CIRC ACCESSION NO--AP0128604

UNCLASSIFIED

2/3 019

UNCLASSIFIED

PROCESSING DATE--20NOV70

CIRC ACCESSION NO--AP0128604  
ABSTRACT/EXTRACT--(U) GP-0-

ABSTRACT. AN EQUIMOLAR MIXT. OF ET SUB3 N, ACID CHLORIDE AND RC(:NH)N:PPH SUB3 IN C SUB6 H SUB6 READILY PPTD. ET SUB3 N:HCL; THE FILTRATE YIELDED SIMILAR TO 90PERCENT RC(:NR PRIME1) N:PPH SUB3 IN UP TO 90PERCENT YIELDS (R AND R PRIME1 SHOWN): CCL SUB3, PHSO SUB2, M. 166.5-68DEGREES; CF SUB3, PHSO SUB2, M. 166-7.5DEGREES; MECCL SUB2, PHSO SUB2, M. 159.5-60DEGREES; CCL SUB3, BZ, M. 149-52DEGREES; CF SUB3, BZ, M. 157-8.5DEGREES; MECCL SUB2, BZ (I), M. 144-4.5DEGREES; CCL SUB3, P,O SUB2 NC SUB6 H SUB4 SO, M. 185.5-6.5DEGREES; CF SUB3, P,O SUB2 NC SUB6 H SUB4 SO, M. 178-9DEGREES; CCI SUB3, P,O SUB2 NC SUB6 H SUB4 S, M. 201-2DEGREES; CF SUB3, P,O SUB2 NC SUB6 H SUB4 S, M. 178.5-80DEGREES; CCL SUB3 (PHO) SUB2 P(O), M. 138.5-40DEGREES; CF SUB3, (PHO) SUB2 P(O), M. 143.5-4.5DEGREES; CCL SUB3, AC, M. 159-61.5DEGREES; CF SUB3, AC, M. 160-20DEGREES; CCL SUB3, MEQ SUB2 C, M. 166-7DEGREES; AND CF SUB3, MEQ SUB2 C, M. 132-4DEGREES. I HEATED 2 HR WITH AC. ETUH GAVE 70PERCENT PH SUB3 P:NCOCCL SUB2 ME, M. 188-90DEGREES. CCL SUB3 C(:NH)N:PPH SUB3 AND 0.5 MOLE BRON HEATED 8 HR IN C SUB6 H SUB6 GAVE 75PERCENT CCL SUB3 C(:NCN)N:PPH SUB3, M. 170-1.5DEGREES; SIMILARLY WAS PREPD. THE CF SUB3 ANALOG, M. 139.5-40.5DEGREES. CF SUB3 C(:NH)N:PPH SUB3 (II) AND DRY HCL IN C SUB6 H SUB6 GAVE 94PERCENT (CF SUB3 C(:NH SUB2) N:PPH SUB3) PRIME POSITIVE CL PRIME NEGATIVE, M. 202.5-3.5DEGREES; SIMILARLY WERE PREPD. (CCL SUB3 C(:NH SUB2) N:PPH SUB3) PRIME POSITIVE BR PRIME NEGATIVE, M. 195-7DEGREES; AND (CF SUB3 C(:NH SUB2)N:PPH SUB3) PRIME POSITIVE BR PRIME NEGATIVE, M. 209-10DEGREES.

UNCLASSIFIED

3/3 019

UNCLASSIFIED

PROCESSING DATE--20NOV70

CIRC ACCESSION NO--AP0128604

ABSTRACT/EXTRACT--MEI AND II GAVE (CF SUB3 C(:NHME)N:PPH SUB3) PRIME POSITIVE I PRIME NEGATIVE, M. 184-8DEGREES; SIMILARLY WAS PREPD. THE CCL SUB3 ANALOG, M. 113-14DEGREES. II AND ME SUB3 COCL IN C SUB6 H SUB6 GAVE AFTER 1 HR AT ROOM TEMP. AND 1 HR AT 20-100DEGREES 70PERCENT CF SUB3 C(:KCL)N:PPH SUB3 (III), M. 122-30DEGREES; SIMILARLY WAS PREPD. 65PERCENT CCL SUB2 ME ANALOG, M. 156-9DEGREES. III AND PH SUB3 P IN ET SUB2 G GAVE IN 10 HR HEATING 75PERCENT (CF SUB3 C(N:PPH SUB3):NPPH SUB3) PRIME POSITIVE CL PRIME NEGATIVE, M. 232-30DEGREES; SIMILARLY WAS PREPD. CCL SUB2 ME ANALOG, M. 174-5DEGREES; BUT THE CCL SUB3 ANALOG DID NOT FORM. II AND KSCN IN ME SUB2 CO GAVE IN 2 HR HEATING 75PERCENT CF SUB3 C(:NSCN)N:PPH SUB3, M. 145-5.5DEGREES; THE CCL SUB3 ANALOG M. 152.5-30DEGREES. FACILITY: INST. ORG. KHIM., KIEV, USSR.

UNCLASSIFIED

1/3 012 UNCLASSIFIED PROCESSING DATE--13NOV70  
TITLE--ALKYLATION OF PHOSPHORUS DIIODIDE AND RED PHOSPHORUS -U-  
AUTHOR--(04)-FESHCHENKO, N.G., IRODIONOVA, L.F., KORDL, O.I., KIRSANOV,  
A.V.  
COUNTRY OF INFO--USSR  
SOURCE--ZH. OBSHCH. KHIM. 1970, 40(4), 773-6  
DATE PUBLISHED-----70  
SUBJECT AREAS--CHEMISTRY  
TOPIC TAGS--ALKYLATION, PHOSPHORUS, IODINE, IODINATED ORGANIC COMPOUND,  
ORGANIC PHOSPHORUS COMPOUND  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRA--3002/1362 STEP NO--UR/0079/70/040/004/0773/0776  
CIRC ACCESSION NO--AP0128765

UNCLASSIFIED

UNCLASSIFIED

PROCESSING DATE--13NOV70

2/3 012

CIRC ACCESSION NO--AP0128765

ABSTRACT/EXTRACT--(U) GP-O- ABSTRACT. THE LOWER ALCS. (C SUB3-5) REACT WITH RED P AND IODINE IN 1:1.2:3 RATIO AT ELEVATED TEMP. WITHOUT PRESSURE MUCH MORE RAPIDLY THAN THE ALKYL IODIDES WITH SAME RADICALS REACT WITH P SUB2 I SUB4 OR P SUB4 I SUB2. AFTER ALK. TREATMENT THE REACTION MIXTS. YIELD TERTIARY PHOSPHINE OXIDES, AND PHOSPHONIC AND PHOSPHINIC ACIDS. ALKYL IODIDES IN THE PRESENCE OF H SUB3 PO SUB4 REACT WITH P AND IODINE OR WITH P SUB2 I SUB4 JUST AS DO THE CORRESPONDING ALCS. THE MIXED ROH AND IODINE IN THE ABOVE RATIO WERE TREATED WITH RED P AT SMALLER THAN 70DEGREES, THEN REFLUXED UNTIL CONDENSATION OF RI CEASED IN THE REFLUX CONDENSER AND AFTER TREATMENT WITH 20PERCENT NAOH AND EXTN. WITH C SUB6 H SUB6 GAVE IN THE ORG. LAYER THE REQUISITE R SUB3 PO; THE ALK. LAYER GAVE ON ACIDIFICATION THE APPROPRIATE ACIDS. THE FOLLOWING YIELDS OF INDICATED PRODUCTS WERE OBTAINED AFTER REACTION (HR DURATION IN PARENTHESES) OF THE ALCS. WITH INDICATED RADICALS: PR (40-4) 50.3PERCENT R SUB3 PO AND 32-7PERCENT R SUB2 PO SUB2 H; BU (12), 43PERCENT R SUB3 PO, 45PERCENT R SUB2 PO SUB2 H; C SUB5 H SUB11 94-5) 43PERCENT R SUB3 PO, 41PERCENT RPO SUB3 H SUB2; ISO-C SUB5 H SUB11 (4-5), 32PERCENT R SUB3 PO AND 50PERCENT RPO SUB3 H SUB2; CYCLO-C SUB6 H SUB11 (4) 80PERCENT R SUB3 PO; AND PHCH SUB2 CH SUB2, 79PERCENT R SUB3 PO. OCTYL IODIDE WITH P SUB2 I SUB4 IN THE PRESENCE OF 1-2 MOLES H SUB3 PO SUB4 WAS HEATED GRADUALLY TO 200-100DEGREES IN VARIOUS PROPORTIONS AND, AFTER AN ALK. TREATMENT, GAVE UP TO 40PERCENT R SUB3 PO, UP TO 18PERCENT R SUB2 PO SUB2 H AND 34PERCENT RPO SUB3 H SUB2, THE ACIDS BEING ISOLATED IN THE FORM OF CHLORIDES.

UNCLASSIFIED

UNCLASSIFIED

PROCESSING DATE--13NOV70

3/3 012

CIRC ACCESSION NO--AP0123765

ABSTRACT/EXTRACT--IT WAS SUGGESTED THAT IN THIS REACTION P SUB2 I SUB4 AND H SUB3 PO SUB4 FORM A REACTIVE INTERMEDIATE WITH HO OR OTHER REACTIVE GROUPS WHICH CANNOT BE REPLACED BY R; THIS APPEARS TO BE UNSTABLE AND ABLE TO REACT INSTANTLY WITH RI OR WITH ITSELF, AS IT COULD NOT BE ISOLATED. REACTION OF 2:2:2:2:1 MIXT. OF RI, RED P, I SUB2 AND H SUB3 PO SUB4 GAVE THE FOLLOWING YIELDS: PR (33 HR) 52.7PERCENT R SUB3 PO AND 28.5PERCENT R SUB2 PO SUB2 H; BU (12 HR) 41.4PERCENT R SUB3 PO, AND 52PERCENT R SUB2 PO SUB2 H; C SUB5 H SUB11 (4 HR) 42.2PERCENT R SUB3 PO AND 48.6PERCENT RPO SUB3 H SUB2; ISO-C SUB5 H SUB11 (9 HR) 32.2PERCENT R SUB3 PO AND 57PERCENT RPO SUB3 H SUB2; CYCLO-C SUB6 H SUB11 (2 HR) 11PERCENT R SUB3 PO, 40PERCENT R SUB2 PO SUB2 H AND 32.6PERCENT RPO SUB3 H SUB2; AND PHCH SUB2 CH SUB2 (11 HR) 52PERCENT R SUB3 PO, AND 34.8 PERCENT R SUB2 PO SUB2 H. FACILITY: INST. ORG. KHIM., KIEV, USSR.

UNCLASSIFIED



1/3 006 UNCLASSIFIED PROCESSING DATE--13NOV70  
TITLE--REACTION OF PHOSPHOROUS ACID WITH IODINE AND ALCOHOLS. II -U-  
AUTHOR--(02)-PISAREV, V.T., KIRSANOV, A.V.  
COUNTRY OF INFO--USSR  
SOURCE--ZH. OBSHCH. KHIM. 1970, 40(4), 770-3  
DATE PUBLISHED-----70  
SUBJECT AREAS--CHEMISTRY  
TOPIC TAGS--ALCOHOL, GLYCOL, IODINATED ORGANIC COMPOUND, IODINE,  
PHOSPHORUS, PROPANOL, ETHYLENE, PROPYLENE, BUTENE FESHCHENKO, N. G.  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRAME--3002/1364 STEP NO--UK/0079/70/040/004/0770/0774  
CIRC ACCESSION NO--AP0128766  
UNCLASSIFIED

2/3 006

UNCLASSIFIED

PROCESSING DATE--13NOV70

CIRC ACCESSION NO--AP0128766

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. SECONDARY ALCS. AND GLYCOLS REACT WITH P AND IODINE OR WITH H SUB3 PO SUB3 AND IODINE TO FORM ALKYL IODIDES; TERTIARY ALCS. REACT IN TWO PATHS TO FORM H SUB2 J AND OLEFIN OR TO FORM ALKYL IODIDES, IN THE REACTION WITH H SUB3 PO SUB3 AND IODINE, WHILE IN REACTION WITH RED P AND IODINE THE DEHYDRATION IS INHIBITED AND ALKYL IODIDE IS FORMED IN GOOD YIELD PROVIDED THAT IODINE IS ADDED TO MIXED ROH AND RED P. TO 0.5 MOLE ISO-PROH AND 0.25 MOLE H SUB3 PO SUB3 WAS ADDED AT 70DEGREES 0.25 MOLE IODINE AT 80-90DEGREES; HEATING THE MIXT. 1 HR AT 85DEGREES GAVE (AFTER TREATMENT WITH AQ. NA SUB2 SO SUB3) 84PERCENT ISO-PRI; AN 87PERCENT YIELD RESULTED FROM ADDN. OF 1 MOLE RED P TO 0.5 MOLE ISO-PROH AND 0.25 MOLE IODINE AT 80-100DEGREES AND HEATING THEMIXT. 2 HR AT 80-100DEGREES. TO 0.5178 MOLE ME SUB3 COH AND 0.3452 MOLE H SUB3 PO SUB3 WAS ADDED AT 70DEGREES 0.3452 MOLE IODINE (MAINTAINING THE MIXT. AT 75-80DEGREES); HI WAS EVOLVED ALONG WITH ME SUB2 C:CH SUB2; AFTER 2.5 HR AT 80DEGREES AND AN AQ. TREATMENT, THE MIXT. GAVE 0.3641 MOLE HI, 0.0643 MOLE ME SUB2 C:CH SUB2, AND 0.2217 MOLE ME SUB2 CI (43PERCENT). TO 1 MOLE ME SUB3 COH AND 0.2 G ATOM RED P WAS ADDED 1 MOLE IODINE AT 70-80DEGREES AND AFTER A HOLD OF 2.5 HR GAVE 78PERCENT ME SUB3 CI.

UNCLASSIFIED

3/3 006

UNCLASSIFIED

PROCESSING DATE--13NOV70

CIRC ACCESSION NO--AP0128766

ABSTRACT/EXTRACT--TO 0.25 MOLE GLYCOL AND 0.25 MOLE H SUB3 PO SUB3 WAS  
ADDED AT 70DEGREES 0.25 MOLE IODINE (MAINTAINING THE MIXT. AT  
80-110DEGREES) AND THE MIXT. HEATED 1.5-2 HR AT 80-100DEGREES TO GIVE  
THE FOLLOWING DIIODIDES: 1,3,PROPYLENE 88PERCENT; 1,3,BUTYLENE  
91.5PERCENT; 1,4,BUTYLENE 91.5PERCENT; 1,5,PENTYLENE 91.5PERCENT;  
1,6,HEXYLENE 91.5PERCENT; 1,10,DECYLENE 91.5PERCENT; AND ETHYLENE  
16PERCENT WITH THE LATTER THE REACTION IS BEST RUN AT NO HIGHER THAN  
50-70DEGREES, WHEN IT ALSO YIELDS 20PERCENT HI, 14PERCENT C SUB2 H SUB4,  
AND MUCH TAR. TREATING 0.25 MOLE GLYCOL AND 0.25 MOLE IODINE WITH 0.1 G  
ATOM RED P AT 80-100DEGREES AND HEATING THE MIXT. 1.5-2 HR AT  
80-100DEGREES GAVE THE ABOVE DIIODIDES IN 94-7PERCENT YIELDS, EXCEPT 9CH  
SUB2 I) SUB2, WHICH GAVE BUT 26PERCENT YIELD, AGAIN BEST AT  
50-60DEGREES. FACILITY: INST. ORG. KHIM. KIEV, USSR.

UNCLASSIFIED

USSR

UDC 616.981.551-612.014.464

BELOKHNEV, Yu. N., VODOLAZOV, Yu. A., KAMENNYI, A. N., POPOV, B. V., and  
KIRSANOV, B. N.

"Inhalation of Oxygen Under High Pressure for Tetanus"

Kazan', Kazanskiy Meditsinskiy Zhurnal, No 5, 1971, p 93

Abstract: A 46-year-old male received a prophylactic dose of tetanus antitoxin as well as tetanus toxoid for gunshot wounds in the neck and back, but his condition began to deteriorate sharply seven days after the injury and convulsions occurred with increasing frequency. When repeated injections of tetanus antitoxin, oxygen, analgesics, antihistamine, and desensitizing agents were ineffectual and the convulsions intensified, it was decided to institute hyperbaric oxygen therapy (1-1/2 hour exposure with O<sub>2</sub> pressure about 3 atm. The symptoms began to subside within 24 hours and respiration became easier. However, convulsions were provoked by the slightest movement and another session was carried out 24 hours later. The patient's condition showed steady improvement and convulsions became less frequent and confined to increasingly smaller areas. By the 15th day from the time of admission to the hospital, the clinical symptoms of tetanus disappeared completely.

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1/2 025 UNCLASSIFIED PROCESSING DATE--27NOV70  
TITLE--TWO QUANTUM ANTI STOKES PROCESSES IN THE EXCITATION OF DYES -U-  
AUTHOR-(04)-VEDUTA, A.P., GALANIN, M.D., KIRSANDY, B.P., CHIZHIKOVA, Z.A.  
COUNTRY OF INFO--USSR  
SOURCE--JETP LETTERS (USA), VOL. 11, NO. 3, P. 157-62, FEB. 1970  
DATE PUBLISHED-----70  
  
SUBJECT AREAS--MATERIALS, PHYSICS  
TOPIC TAGS--DYE, RAMAN SCATTERING, LUMINESCENCE, EXCITED STATE  
  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRAME--3006/1854 STEP NO--US/0000/70/011/003/0157/0162  
CIRC ACCESSION NO--AP0135419  
UNCLASSIFIED

2/2 025

UNCLASSIFIED

PROCESSING DATE--27NOV70

CIRC ACCESSION NO--AP0135419

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. REPORTS AN EXPERIMENTAL  
OBSERVATION OF ANTI STOKES RAMAN SCATTERING BY THE ELECTRONIC STATE OF  
MOLECULES AND LUMINESCENCE FROM THE SECOND EXCITED ELECTRONIC STATES IN  
ORGANIC DYES. FACILITY: USSR ACAD. SCIS.

UNCLASSIFIED

1/3 042 UNCLASSIFIED PROCESSING DATE--30OCT70  
TITLE--TWO QUANTUM ANTI STOKES PROCESSES DURING THE EXCITATION OF DYES -U-  
AUTHOR-(04)-VEDUTA, A.P., GALANIN, M.D., KIRSANGV, B.P., CHIZHIKOVA, Z.A.  
COUNTRY OF INFO--USSR  
SOURCE--PIS'MA ZH. EKSP. TEOR. FIZ. 1970, 11(3), 157-62  
DATE PUBLISHED-----70

SUBJECT AREAS--MATERIALS, PHYSICS

TOPIC TAGS--RUBY LASER, NEODYMIUM LASER, LIGHT SCATTERING, EXCITED STATE,  
DYE, SPECTRUM, EXCITATION ENERGY, LUMINESCENCE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRA--2000/2090

STEP NO--UR/0386/70/011/003/0157/0162

CIRC ACCESSION NO--AP0125677

UNCLASSIFIED

2/3 042

UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0125677

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A SOLN. OF DYE WAS EXPOSED FOR 20 NSEC TO IMPULSES FROM RUBY AND ND LASERS WITH A PEAK POWER OF 50 MW, AND THE SPECTRA OF THE Laterally Scattered Light Measured. Characteristic Electronic Vibration Bands are shown: (1) Absorption of Quantum of Radiation, (2) Relaxation to Lower State, (3) One Quantum Luminescence, (4) Absorption with Transfer to Virtual Level, (5) Relaxation, (6) Nonradiative Relaxation to 1st Excited State, (7) Luminescence from 1st Excited State, and (8) Anti Stokes Combination Degradation. All Spectra showed that the Max. corresponding to Process (8) lie on the short wavelength slope of the Max. corresponding to Process (7). The position of the Max. coincide with the sum of the energies of the processes (3) and (4). Excitation of Polymethine dyes with 2nd harmonic radiation of wavelength 530 nm does not produce a Max. for Process (8), but a Max. is seen for Process (7). Process (8) is approx. linear with excitation energy except at low energies when 2-photon excitation becomes important. Process (7) is linear with excitation energy. The polarization of various Max. was measured by observation of cross section in relation to exciting beam direction. Exptl. values of polarization ratio (I perpendicular to I parallel to) were (A) 0.74 plus or minus 0.12 with unpolarized radiation at Max. 570 nm, and (B) 0.63 plus or minus 0.05 and 0.50 plus or minus 0.06 with polarized radiation at Max. 380 and 450 nm, resp. The cross section of Process (8) was 10 Prime Negative 28 to 10 Prime Negative 27 cm Prime 2.

UNCLASSIFIED



3/3 042

UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0125677

ABSTRACT/EXTRACT--THEORY GIVAS A VALUE OF 10 PRIME NEGATIVE29-10 PRIME  
NEGATIVE26 CM PRIME2, AND EXPTS. WITH 2,PHOTON ABSORPTION GIVE A VALUE  
OF 10 PRIME NEGATIVE27 CM PRIME2. ALL MAX. FOR PROCESS (8) ARE BROADER  
THAN EXPECTED FOR ONE QUANTUM ABSORPTION AND IN SOME CASES ARE SHIFTED  
TO THE SHORTWAVE REGION. THIS MAY BE BECAUSE PROCESS (2) IS INCOMPLETE  
OWING TO THE CHARACTERISTIC LIFETIMES OF THE PROCESSES (10 PRIME  
NEGATIVE13-10 PRIME NEGATIVE11 SEC). FACILITY: FIZ. INST. IM.  
LEBEDEVA, MOSCOW, USSR.

UNCLASSIFIED

USSR

UDC 576.851.513.083.3+614.777-078

KITSANOV, G. P., Candidate of Medical Sciences, Mordovskiy University, Saransk

"Semisolid Agar Prepared From Powdered Mycelium Extract for Isolating Anaerobic Microorganisms From Water"

Moscow, Gigiyena i Sanitariya, No 9, 1971, pp 113-114

Abstract: One of the Saransk Pharmaceutical Plant's waste products -- the mycelium of *P. chrysogenum* No 194 -- was analyzed, and the mycelium powder was found to contain about 4.6% total nitrogen; 27% pure proteins; 6.6% monosaccharides; 7.7% polysaccharides; 11.5% cellulose; 6.7% fat; 22% lignin; and 16.2% ash, including magnesium, silicon, calcium, phosphorus, copper, aluminum, bismuth, iron, nickel, zinc, sulfur, and cobalt. It also contained the following vitamins (in micrograms/kg of powder): choline (3700), thiamine (6), riboflavin (37), pantothenic acid (64), nicotinic acid (140), folic acid (7), biotin (5), pyridoxine (13), and B<sub>12</sub> (0.02). An extract was prepared by cooking 40 g of the powder with 1 ℓ of distilled water for 15 min, letting it stand for 10 min, and filtering the supernatant through cloth. By adding agar, glucose, synthetic methionine, and b-aminobenzoic acid to this concentrated extract, a semisolid agar solution was prepared and sterilized in 100 and 30 ml flasks. To test the suitability of this medium for culturing, Petri

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USSR

KIRSANOV, G. P., Gigiyena i Sanitariya, No 9, 1971, pp 113-114

dishes filled with it were inoculated with anaerobic microorganisms (Bac. nistoliticus, Bac. sporogenes, Cl. perfringens, Cl. odematiens, Vibrion septicus, Cl. chavez, Cl. tetani, and Cl. botulinum and Bact. hecrophorum) to contain 10-100 cells per ml of medium. Cultures were incubated at 37°C for 48 hours. At that time, gas bubbles with a specific odor formed, well-developed bacteria were observed on microscopic slides, and optical tests revealed a concentration of 16 billion cells per ml of medium. This growth was better than on standard agar. The semisolid agar is recommended for growing anaerobic microorganisms which may be present in water.

2/2

12

USSR

UDC 614.718-078

KIRSANOV, G. P., Candidate of Medical Sciences, Morvodian University, Saransk

"An Optimal Solid Culture Medium Made With Mycelium for Investigation of Bacterial Pollution of the Air"

Moscow, Gigiyena i Sanitariya, No 8, Aug 70, pp 107-108

Abstract: The Saransk Medical Preparations Plant obtains large amounts of mycelium as a waste product in the course of submerged fermentation of the fungus *P. chrysogenum*, No 194. The powder made from this mycelium is rich in total nitrogen, ammonia nitrogen, polysaccharides, lignin-like substances, traces of magnesium, manganese, silicon, calcium, phosphorus, copper, aluminum, bismuth, iron, nickel, zinc, sulfur, and cobalt, and vitamins (choline, thiamine, riboflavin, pantothenic acid, nicotinic acid, folic acid, biotin, pyrodoxin, and B<sub>12</sub>). This "protein concentrate" is ideal for use in culture media since, boiled in distilled water, it undergoes physicochemical changes that facilitate its digestion by microorganisms. A solid medium consisting of 8 g of the powder, ammonium nitrate, methionine, glucose, and agar was effective in growing various bacteria isolated from the diphtheria and dysentery wards in a hospital for infectious diseases. A total of 25 strains were isolated from

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USSR

KIRSANOV, G. P., Gigiyena i Sanitariya, No 8, Aug 70, pp 107-108

172 air samples collected. Diphtheria bacilli did not grow at all on meat-peptone agar, while seven cultures were identified on the mycelium agar. Only two cultures of diphtheria microbes were found on meat-peptone agar, as compared to seven on the mycelium agar.

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- 22 -

AA0038812

UR 0482

Soviet Inventions Illustrated, Section I Chemical, Darwent,

3-70

238676 SURFACE PURIFICATION of mounts of electric vacuum devices by ion bombardment can be improved by exhausting the devices, depending on size, at a rate of 0.001-500 l/sec. and by applying a voltage of 100-3000 V to the electrodes while the pressure drops from 100 to 0.1 Torr. An oxidation of the electrodes can be avoided in the volatilisation of the fatty and salty impurities by a suitable selection of the voltage. 15.7.67. as 1172683/26-25. A E.GRODSHTEIN et alia. (14.7.69.) Bul.10710.3.69. Class 21g. Int.Cl. H01j

AUTHORS: Grodshteyn. A. Ye.; Kashnikov. N. G.; Kirsanov, N. D.; and Yuvenskaya, G. A.

19740022

USSR

UDC: 621.396.983

BELOUSOV, N. N., YELFIMOV, V. I., and KIRSANOV, N. I.

"Optimal Algorithm for Measuring the Dispersion of a Random Process With the Effects of External and Internal Additive Noise Taken Separately Into Account"

Kiev, Izvestiya VUZ SSSR-- Radioelektronika, No 10, 1972, pp 1291-1294

Abstract: The problem of measuring the dispersion of a normal stationary random process on a background of normal stationary noise is considered, where both signal and noise processes are noncorrelational. An equation is given for the conditional estimate of the signal dispersion for an accurately known noise dispersion. Although the solution to this equation is well known, it does not take into account the separate effects of the external and internal additive noises. To correct this omission, the present brief communication offers a method of eliminating the effect of the internal noise of the measuring device on the accuracy of the signal dispersion measurement. In developing the algorithm for the dispersion measurement, the authors assume that the samplings of the  $1/2$

USSR

UDC: 621.396.983

BELOUSOV, N. N., et al, Izvestiya VUZ SSSR--Radioelektronika, No 10, 1972, pp 1291-1294

noise and signal mixtures are obtained by a number of identical measuring devices.

2/2

- 120 -



USSR

UDC 621.396.962.2

BELOUSOV, N.N., KIRSANOV, N.I. (Members Of The Scientific-Technical Society Of Radio Engineering, Electronics, And Communication imeni A.S. Popov)

"Discriminator Of Tracking Measurer Of The Spatial Delay Time Of A Noise-Like Signal"

Radiotekhnika, Vol 27, No 3, March 1972, pp 60-67

Abstract: The discriminator is studied of a tracking measurer of the relative spatial delay time of a noise-like signal picked up by two spaced antennas. A block diagram of the discriminator is discussed. The discriminatory and fluctuation characteristics are determined for normal stationary additive signals and noise in the case of rapid fluctuations. The expression for the fluctuation characteristic is applicable only with weak signals. Some of the material of this paper as well as certain experimental results were reported at the XVII Scientific-Technical Conference Devoted To "Radio Day" held at Tomsk in May 1969. 3 ill. 4 ref. Received by editors, 22 Dec 69; after further improvement, 7 July 70.

1/1

USSR

UDC 621.396.75

BELOUSOV, N. N., KIRSANOV, N. I., PRAVDUKHIN, V. M.

"Effect of Inertial Differentiation on the Accuracy of Measuring Delays by a Differential Correlator"

Tr. Uralskogo politekhn. in-ta (Works of the Urals Polytechnical Institute), 1970, Collection 183, pp 106-109 (from RZh-Radiotekhnika, No 8, Aug 70, Abstract No 8G88)

Translation: In differential direction finders with direction finding by the signal minimum, the optimal device for measuring the delay between two correlated signals is a discriminator with delayed synchronization. The actual differentiating device of the discriminator introduces errors into the measurement of the delay caused by the fact that the amplitude and phase-frequency characteristics of it differ from the same characteristics of an ideal differentiating device. From comparison of the real and ideal discrimination characteristics it follows that in the real case there is null shift of the discrimination characteristic and a decrease in its steepness. This leads to a systematic error equal to the null displacement and to a random error determined by the instability of the elements of the differentiating device. In some cases, the null displacement

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USSR

BELOUSOV, N.N., et al, Tr. Uralskogo politekhn. in-ta (Works of the Urals Polytechnical Institute), 1970, Collection 183, pp 106-109 (from RZh-Radiotekhnika, No 8, Aug 70, Abstract No 8G88)

is equal to the time constant of the differentiating circuit, and the random error can be determined by known instability of the parameters of the device. There are two illustrations and a two-entry bibliography.

USSR

UDC 541.651.2

SHTEPANUK, A. S., ZASORINA, V. A., TKACHENKO, O. M., and KRESANOV, O. V.,  
Institute of Organic Chemistry Acad. Sc. Ukr. SSR

"N-Substituted Amides of Triphenylphosphazocarboxylic Acid"

Kiev, Dopovidi Akademii Nauk Ukrain's'koi SSR, No 2, Feb 71, pp 153-155

Abstract: Triphenylphosphazohydride (I) reacted with carboxylic and sulfonic acid isocyanates forming N-acylamides of triphenylphosphazocarboxylic acid (II). With trimethylsiliconisocyanate (I) gave an addition product. With silicon tetraisocyanate (I) can react in several ways depending on the ratio of reagents; a 1:1 ratio gave an N-(silyltriisocyanate) amide of (II), the same product being obtained with a 4:1 ratio of (I) to the silicon compound after a 30 min reaction at +50°. The 4:1 ratio after 6 hrs at room temperature yielded  $\text{Si}(\text{ICO})_2[\text{NHC}(\text{O})\text{N:P}(\text{C}_6\text{H}_5)_3]_2$  and after 48 hrs --  $\text{Si}(\text{ICO})[\text{NHC}(\text{O})\text{N:P}(\text{C}_6\text{H}_5)_3]_3$ .

Reacting (I) with the dichloroanhydride of isocyanatophosphoric acid taken in a 1:1 ratio gave N-dichlorophosphorylamide of (II); when a 5:1 ratio was selected -- the product was N-(bis-triphenylphosphazophosphoryl amide) of (II).

1/2

USSR

SHTEPANUK, A. S., Dopovidi Akademii Nauk Ukrain's'koi RSR, No 2, Feb 71,  
pp 153-155

Reacting (I) with derivatives of isocyanatophosphonic, isocyanatophosphinic,  
and isocyanatomethylphosphonic acids yielded N-phosphonyl amides of (II).  
Finally, reaction of (I) with benzo-2-isocyanato-1,3-dioxo-2-phospholine  
yielded N-(benzo-1,3-dioxo-2-phospholinamide) of (II).

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AA0038315

UR 0482

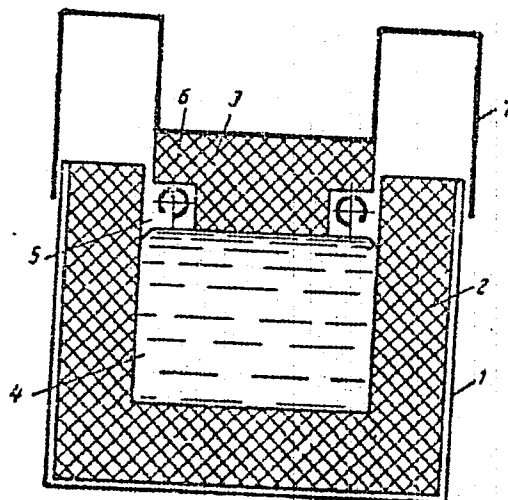
Soviet Inventions Illustrated, Section I Chemical, Derwent, 18

238730 LAUNDER FOR MOLTEN ALUMINIUM AND ITS ALLOYS  
has slots (5) and tubes (6) in its lid (3)  
to pipe protective gas in, at the same time is  
cowled (7) to reduce operative gas losses. The lid  
floats freely on the actual molten liquid in the  
launder and thus prevents impurities entering, at  
the same time protecting from the atmosphere.

18  
AUTHORS: Makorov. G. S.; Andreyev, A. D.; Zakharevich, N. I.;  
Alekhin, A. A.; and Kirsanov, V. I.

19731411

AA0038315



4.6.66 as 1082038/22-2. MAKAROV.G.S.et al.(19.8.69)  
Bul 10/10.3.69. Class 31b<sup>2</sup>. Int.Cl.B 22d.

19731412

USSR

UDC 621.791.92:669.018.25

DMITRIYEV, V. V., Candidate of Engineering Sciences, Kazinskiy, L. R. and  
KIRSANOV, YU. KIRSANOV, YU. K., Engineers

"Equipment for Vacuum-Arc Build-up Welding of a Multi-Cutting High-Speed  
Steel Tool"

Moscow, IzVUZ-Mashinostroyeniye, No 12, 1972, pp 175-177

Abstract: The vacuum chamber from an ELU-4 electron-beam unit, partially  
modernized and equipped with additional mechanisms, was used at the Zhdanov  
Metallurgical Institute for investigating the vacuum-arc surfacing of a  
cutting tool. Pump VN-1 was replaced by a VN-4G pump which had a higher  
evacuation rate and provided a working vacuum of  $10^{-3}-10^{-4}$  mm Hg in 5-6 minutes.  
Technical specifications of the unit are as follows:

Vacuum chamber volume, liters	800
Maximum vacuum obtainable, mm Hg	$5 \times 10^{-5}$
Working vacuum, mm Hg	$10^{-3}-10^{-4}$
Time to achieve working vacuum, min	5-6
Maximum sizes of parts being surface, mm	$\phi 300 \times 200$
Required power, kv	

1/2



USSR

DMITRIYEV, V. V., et al., IzVUZ-Mashinostroyeniye, No 12, 1972, pp 175-177

- a) during vacuum pump operation .....6.2
- b) during welding .....10
- Cooling water consumption, liter/hour .....500

Tests with the vacuum-arc surfacing unit, conducted jointly with the Zhdanov Heavy Machine Building Plant, warranted it being recommended for use in surfacing operations. 2 figures, 1 table.

2/2

- 80 -

USSR

UDC 536.24

SECHUKIN, V. K., IDIATULLIN, N. S., GOLDOBEYEV, V. I. and KIRSANOV, YU. A.

"Investigation of Heat Transfer With Flow Through Wire-Mesh"

Kazan', Tr. Kazan. Aviats. In-ta (Works of Kazan' Aviation Institute), No 133, 1971, pp 62-71 (from Referativnyy Zhurnal-Aviatsionnyye i Raketnyye Dvigateli, No 2, Feb 72, Abstract No 2.34.116)

Translation: The results of the practical application of the gradient method to the investigation of heat transfer near a porous wall are presented. Direct measurements of the temperature distribution through the thickness of the wall made out of wire mesh serve as a basis for determining the heat flux to the surface of the wall and the heat transfer coefficient with the flow of gas through the wall. The wire mesh package and the test setup are described. The results of tests for flow without vortex agree with known data. Some new experimental data on heat transfer with vortex gas flow have been obtained. 6 illustrations. 12 references.

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USSR

UDC 621.791.92.669.018.25

DMITRIYEV, V. V., Candidate of Engineering Sciences, Kazinskiy, L. R. and  
KIRSANOV, YU. KIRSANOV, YU. K., Engineers

"Equipment for Vacuum-Arc Build-up Welding of a Multi-Cutting High-Speed  
Steel Tool"

Moscow, IzVUZ-Mashinostroyeniye, No 12, 1972, pp 175-177

Abstract: The vacuum chamber from an ELU-4 electron-beam unit, partially  
modernized and equipped with additional mechanisms, was used at the Zhdanov  
Metallurgical Institute for investigating the vacuum-arc surfacing of a  
cutting tool. Pump VN-1 was replaced by a VN-4G pump which had a higher  
evacuation rate and provided a working vacuum of  $10^{-3}$ - $10^{-4}$  mm Hg in 5-6 minutes.

Technical specifications of the unit are as follows:

Vacuum chamber volume, liters .....	800
Maximum vacuum obtainable, mm Hg.....	$5 \times 10^{-5}$
Working vacuum, mm Hg .....	$10^{-3}$ - $10^{-4}$
Time to achieve working vacuum, min .....	5-6
Maximum sizes of parts being surface; mm .....	$\varnothing 300 \times 200$
Required power, kv	

1/2

USSR

DMITRIYEV, V. V., et al., IzVUZ-Mashinostroyeniye, No 12, 1972, pp 175-177

a) during vacuum pump operation .....6.2  
b) during welding .....10  
Cooling water consumption, liter/hour .....500

Tests with the vacuum-arc surfacing unit, conducted jointly with the  
Zhdanov Heavy Machine Building Plant, warranted it being recommended for  
use in surfacing operations. 2 figures, 1 table.

2/2

- 80 -

USSR

UDC 616.145.11-008.1-02:616-001.28-057

KIRSANOVA, G. I., and SOSNOVSKAYA, F. M., Institute of Industrial Hygiene and Occupational Diseases, Academy of Medical Sciences USSR

"Clinical and Physiological Characteristics of Venous Disturbances of the Cerebral Circulation After Exposure to Radiation"

Moscow, Meditsinskaya Radiologiya, No 1, 1972, pp 16-22

Abstract: Examination of 167 persons with neurocirculatory dystonia who had been occupationally exposed to low doses of ionizing radiation for over 10 years revealed 84 who were suffering from unusually persistent headaches. These occurred very often after sleep, long shower, on a bus or train, after intense intellectual work, and constrained body position. Rheoencephalographic studies showed decreased arterial tone as well as signs of insufficient venous release from the cranial cavity. Similar phenomena were observed in persons suffering from chronic radiation sickness or who had recovered from acute radiation sickness but not in neurotics complaining of stubborn headaches. (Intravenous injection of theophylline ethylenediamine increased the tone of the cerebral blood vessels in those exposed to radiation and relieved their headaches but had no effect on the neurotics). The intensity of the venous disturbances was related to the size of the total irradiation dose and it  
1/2

USSR

KIRSANOVA, G. I., and SOSNOVSKAYA, F. M., Meditsinskaya Radiologiya, No 1, 1972, pp 16-22

increased with the age of the individual. The EKG's of the irradiated individuals were characterized by a weakening of the alpha rhythm and increase in beta activity.

2/2

- 72 -

Public Health, Hygiene and Sanitation

USSR

UDC 616.12-009.86-02:613.6487-07:616.831-073.731+616.831-073.97

KIBSANOVA, G. I., and SOSNOVSKAYA, F. M., Institute of Labor Hygiene and Occupational Diseases (Professor A. A. Letavet, Director), Academy of Medical Sciences USSR. Moscow

"Cerebral Circulation and the Bioelectric Activity of the Brain With Neurocirculatory Dystonia in Persons Subjected to Occupational Irradiation"

Moscow, Zhurnal Nevropatologii i Psikiatrii imeni S. S. Korskova, Vol 71, No 11, 1971, pp 1,605-1,611

Abstract: Cerebral circulation and cortical biopotentials were studied in 167 persons subjected to irradiation. The presence of a clinical neurocirculatory dystonia syndrome and total radiation doses of 50-450 rem were the main criteria. Clinical neurological examination, rheoencephalographic, and encephalographic test results were compared with ophthalmodynamometric and ophthalmoscopic investigations. No significant cerebral circulation disorders were demonstrated. Some depression of cerebral vascular reactivity and satisfactory functional compensation were noted. The bioelectric brain potentials revealed a tendency toward a rapid fluctuation range and certain changes in reaction to functional loads. EEG changes increased in proportion to increased radiation doses. A certain prevalence of neurocirculatory

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USSR

KIRSANOVA, G. I., and SOSNOVSKAYA, F. M., Zhurnal Nevropatologii i Psikhatrii imeni S. S. Korsakova, Vol 71, No 11, 1971, pp 1,605-1,611  
dystonia of the hypotonic type was observed, especially in persons having been subjected to the highest total radiation dose and those with a clinical syndrome of chronic radiation sickness.

2/2

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USSR

UDC 517.5

KIRSANOVA, G. V., Moscow Aviation Institute

"The Relationship Between the Upper Bounds of Function Moduli and their Higher Derivatives"

Moscow, Matematicheskaya Zametki, Vol 14, No 3, 1973, pp 329 - 338

Abstract: This article develops the solution to a problem formulated by P. I. Romanovskiy. Given functions  $f(t) \in C_n$  on the entire real axis, the  $n^{\text{th}}$  derivative of which has a given convex modulus of continuity  $\omega(|t|)$ , we are to determine the relationship between the upper bounds of the functions and their  $n^{\text{th}}$  derivative (a generalization of a problem of A. N. Kolmogorov). The author has previously solved this problem for  $n = 1$  and  $n = 2$ . This article is devoted to arbitrary values of  $n$  and a class of periodic functions whose  $n^{\text{th}}$  derivative is even and reaches a maximum at 0, while the  $(n-1)^{\text{th}}$  derivative becomes 0 only at the point  $\frac{1}{(0, 2\ell)}$ , where  $2\ell$  is the period of the function.

The relationship between the upper bound and the  $n^{\text{th}}$  derivative is established for this class of functions.

1/1

1/2 006 UNCLASSIFIED PROCESSING DATE--04DEC70  
TITLE--ISOSELENOCYANATES OF N SUBSTITUTED IMINOCARBOXYLIC ACIDS -U-

AUTHOR--(02)-KIRSANOVA, N.A., DERKACH, G.I.

COUNTRY OF INFO--USSR

SOURCE--UKR. KHIM. ZH. 1970, 36(4), 372-4

DATE PUBLISHED-----70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--SELENIUM COMPOUND, CYANATE, IMINE, HETEROCYCLIC BASE COMPOUND,  
ORGANOSELENIUM COMPOUND, UREA DERIVATIVE, POLYNUCLEAR HYDROCARBON

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRA--3008/0896

STEP NO--UR/0073/70/036/004/0372/0374

CIRC ACCESSION NO--AP0137924

UNCLASSIFIED

2/2 006

UNCLASSIFIED

PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AP0137924

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. R EQUALS PHC(:NPH) AND R PRIME1 EQUALS P,CLC SUB6 H SUB4 C(:NC SUB6 H SUB4 CL,P) THROUGHOUT THIS ABSTR. RCL AND NASECN FORM RNCSE (I), M. 62-3 (LIGROINE). I WITH PHNH SUB2 AND P,MEOC SUB6 H SUB4 FORM THE CORRESPONDING SELENOUREAS RNHCSENHPPH (II), IN. 144-5DEGREES, AND RNHCSENHC SUB6 H SUB4 OME,P M. 158-60DEGREES, RESP. II REACTS WITH CL AT 20-40DEGREES, SO SUB2 CL SUB2 AT 20DEGREES, OR BZN:CCLSCL AT 20DEGREES TO FORM RN:CCLSECL, M. 185-7DEGREES, WHICH WITH PHNH SUB2 GIVES N,PHENYL,N PRIME,2,BENZOSELENAZOLYBANZAMIDINE HCL SALT(III, Y EQUALS H, X EQUALS H), M. 191-4DEGREES (C SUB6 H SUB6 LIGROINE) AND WITH P,CLC SUB6 H SUB4 NH SUB2 YIELDS III (Y EQUALS CL, X EQUALS H), M. 195-7DEGREES. R PRIME1 CL YIELDS BY SIMILAR REACTIONS R PRIME1 NCSE, M. 100-2DEGREES; R PRIME1 NHHCSENHPPH, M. 152-4DEGREES; R PRIME1 N:CCLSECL, M. 193-5DEGREES; AND III(Y EQUALS H, X EQUALS CL), M. 208-9DEGREES. RN:CCLSECL WITH PIPERIDINE FORMS THE GUANIDINE DERIV. IV, M. 136-7DEGREES (C SUB6 H SUB6 LIGROINE MIXT.). FACILITY: INST. ORG. KHIM., KIEV, USSR.

UNCLASSIFIED

USSR

UDC 537.581

GNUCHEV, N.M., KANCHEVA, I.R., KIRSANOVA, T.S.

"Effect Of Ion Bombardment On Thermoemission Properties Of An Alloy Of Palladium With Barium"

Elektron. tekhnika. Nauchno-tekhn.sb. Elektron SVCh (Electronic Technology. Scientific-Technical Collection. Microwave Electronics), 1970, Issue 12, pp 131-133 (from RZh--Elektronika i yeye primeneniye, No 4, April 1971, Abstract No 4A7)

Translation: The effect of bombardment by argon ions on the emission properties of an alloy of Pd plus 1.5-percent Ba was investigated in the temperature interval 900--1200° K with densities of ion current of  $10^{-7}$ -- $10^{-5}$  a/cm<sup>2</sup> and energy of the ions of 2 kev. Ion bombardment leads to a decrease of the work function. On discontinuation of the bombardment the original emission properties of the alloy are restored. Author's abstract.

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USSR

UDC 537.533.2+537.534

KIRSANOVA, T. S., ZHUKOVSKIY, A. N.

"Investigation of the Thermal Stability of Films"

Tr. Leningr. politekhn. in-ta (Works of Leningrad Polytechnical Institute),  
1970, No 311, pp 59-62 (from RZh-Fizika, No 12(1), Dec 70, Abstract No  
12Zh630)

Translation: The thermoemission current and the work function of the Ba-Au system on a Re substrate were measured. It was observed that the behavior of the system under heating at various temperatures and for different durations depends on the proportion of the quantities of Ba and Au. When this proportion corresponded to the combination Ba-Au<sub>5</sub>, the work function of the Ba-Au-Re system remained constant under heating over a wide range of temperature, 850-1500°K. Vaporization of system components began only at temperatures above 1500°K. To explain the experimental data it is hypothesized that a stable intermetallic compound of Ba with Au is formed as the result of heating. Authors' abstract.

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1/2 018 UNCLASSIFIED PROCESSING DATE--27NOV70  
TITLE--ADSORPTION AND CATALYTIC PROPERTIES OF SILICON DIOXIDE WITH AN  
ALUMINUM IMPURITY -U-  
AUTHOR--(03)-KISELEV, A.V., KUZNETSOV, B.V., NIKITIN, YU.S.  
COUNTRY OF INFO--USSR  
SOURCE--KINET. KATAL. 1970, 11(2), 500-12 (RUSS)  
DATE PUBLISHED-----70  
SUBJECT AREAS--CHEMISTRY  
TOPIC TAGS--ADSORPTION, CATALYST ACTIVITY, SILICON DIOXIDE, ALUMINUM  
IMPURITY, SILICA GEL, AROMATIC HYDROCARBON, ETHANOL, FURAN,  
TRIETHYLAMINE  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRA--3008/0880 STEP NO--UR/0195/70/011/002/0500/0512  
CIRC ACCESSION NO--AP0137908

UNCLASSIFIED

2/2 018

UNCLASSIFIED

PROCESSING DATE--27NOV70

CIRC ACCESSION NO--AP0137908

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. HEAT OF ADSORPTION OF A SERIES OF SATD. AND AROMATIC HYDROCARBONS, ETOH, TETRAHYDROGURAN, ADN ET SUB3 N ON SILICA GEL CONTG. 0.02-0.38PERCENT AL WAS DETD. CALORIMETRICALLY AND BY GAS CHROMATOG. AL INCREASES ABSORPTION AND CHEM. ACTIVITY OF SILICA GEL AND CAUSES FORMATION OF VERY ACTIVE NUCLEI FOR ADSORPTION OF ORG. BASES AND FOR CATALYTIC CRACKING. IN GENERAL, THE ACTIVITY OF AL TREATED SILICA GEL DEPENDS ON THE METHOD OF CATALYST PREPN. FACILITY: KHIM. FAK., MOSK. GOS. UNIV. IM. LOMONOSOVA, MOSCOW, USSR.

UNCLASSIFIED

1/2 022 UNCLASSIFIED PROCESSING DATE--27NOV70  
TITLE--REACTIVITY OF ADSORBED MOLECULES AND ELECTRON PROCESSES ON THE  
SURFACE OF A SOLID  
AUTHOR--KISELEV, V.I.  
COUNTRY OF INFO--USSR  
SOURCE--KINET. KATAL. 1970, 11(2), 403-12  
DATE PUBLISHED-----70  
SUBJECT AREAS--CHEMISTRY  
TOPIC TAGS--CATALYST ACTIVITY, SEMICONDUCTOR MATERIAL, ELECTRON,  
ADSORPTION  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRA--3008/0881 STEP NO--UR/0195/70/011/002/0403/0412  
CIRC ACCESSION NO--AP0137909  
UNCLASSIFIED



2/2 022

UNCLASSIFIED

PROCESSING DATE--27NOV70

CIRC ACCESSION NO--AP0137909

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A DISCUSSION OF THE CORRELATION OF CATALYTIC ACTIVITY OF A SEMICONDUCTOR SURFACE AND ITS ELECTRONIC PROPERTIES. A HYPOTHETICAL ELECTRONIC MECHANISM OF CATALYSIS IS DISCUSSED CONSIDERING THE REACTIVITY OF THE NEUTRAL FORM OF ADSORPTION OF SUBSTRATE ON CATALYST SURFACE. FACILITY: FIZ. FAK., MOSK. GOS. UNIV. IM. LOMONOSOVA, MOSCOW, USSR.

UNCLASSIFIED

1/2 039 UNCLASSIFIED PROCESSING DATE--30OCT70  
TITLE--ELECTROCHEMICAL CATHODIC EROSION OF LEAD -U-

AUTHOR-(03)-CHERNOMORSKIY, A.I., KISELEVA, I.G., KABANOV, B.N.

COUNTRY OF INFO--USSR

SOURCE--ELEKTROKHIMIYA 1970, 6(3), 429-32

DATE PUBLISHED-----70

SUBJECT AREAS--CHEMISTRY, MATERIALS

TOPIC TAGS--POTENTIOMETRIC ANALYSIS, CAVITATION, CHEMICAL DECOMPOSITION,  
LEAD, METAL ELECTRODE, ELECTROCHEMISTRY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAE--1998/1141

STEP NO--UR/0364/70/006/003/0429/0432

CIRC ACCESSION NO--AP0121700

UNCLASSIFIED

2/2 039

UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0121700

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE INTRODUCTION OF ALKALI METAL AT HIGH CATHODIC POTENTIALS INTO PB ELECTRODES IN 10N NaOH WAS INVESTIGATED BY A CHRONOPOTENTIOMETRIC METHOD. THE AMT. OF ALKALI METAL INTRODUCED INTO THE PB INCREASED MARKEDLY ON STARTING FROM A POTENTIAL OF MINUS 2.1 V (VS. STANDARD H ELECTRODE), WHILE AT A POTENTIAL OF MINUS 2.3 V, INTENSIVE EROSION OF PB TOOK PLACE (VISUALLY OBSERVED). THE AUTOMIZATION PROCEEDED MORE RAPIDLY AND INTENSELY FOR 1-5 N NaOH SOLNS. AT A POTENTIAL OF MINUS 2.4 V THAN AT MINUS 2.3 V. THE REASON FOR THE ATOMIZATION OF PB IS THE CHEM. DECOMPN. OF THE INTERMETALLIC COMPO. HAVING A LARGE CONTENT OF ALKALI METAL. FACILITY: INST. ELEKTROKHM., MOSCOW, USSR.

UNCLASSIFIED

1/2 022 UNCLASSIFIED PROCESSING DATE--300670  
TITLE--PRACTICAL RECOMMENDATIONS FOR THE USE OF CAPTAX AS A CORROSION  
INHIBITOR -U-  
AUTHOR-(02)-KISELEVA, L.V., KORSKOVA, L.H.  
COUNTRY OF INFO--USSR  
SOURCE--ENERGETIK 1970, (1), 6-7  
DATE PUBLISHED-----70  
  
SUBJECT AREAS--MATERIALS, MECH., IND., CIVIL AND MARINE ENGR  
TOPIC TAGS--CORROSION INHIBITOR, PHTHALIC ACID, STEEL, CORROSION  
RATE/(U)CAPTAX CORROSION INHIBITOR, (U)OP7 CORROSION INHIBITOR, (U)ST20  
STEEL  
  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRAE--1998/1151 STEP NO--UR/0091/70/000/001/0006/0007  
CIRC ACCESSION NO--AP0121710  
UNCLASSIFIED

2/2 022

UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0121710

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. CAPTAX IN A MIXT. WITH THE OP,7 INHIBITOR WAS USED DURING THE WASHING OF A HIGH PRESSURE BOILER WITH PHTHALIC ACID. THE WASHING SOLN. WAS PREPD. BY THE DISSOLN. OF 120 KG OP,7 IN SIMILAR TO 100 L. OF CONDENSATE, THEN ADDN. OF 20 KG CAPTAX AT 60-70DEGREES, AND MIXING AND HEATING OF THE MIXT. WITH STEAM FOR 1.5 HR. THE TOTAL VOL. OF THE SOLN. OBTAINED CONTG. CAPTAX 0.01 AND OP,7 0.06PERCENT WAS 400 L. THE INHIBITING EFFECT OF THE MIXT. WAS GREATER THAN THAT OF A PURE CAPTAX AND THE CORROSION RATE OF THE ST 20 STEEL IN THE 2PERCENT PHTHALIC ACID SOLN. WAS 7-10 G-M PRIME2 HR AT A WASHING SOLN. FLOW VELOCITY 1-1.5 M.

UNCLASSIFIED

Pulse Technique

USSR

UDC: 621.317.79

KISELEVSKIY, E. N., SERGEYEV, A. I., TERTYSHNYY, V. T., Kiev "Order of Lenin" Polytechnical Institute imeni the Fiftieth Anniversary of the Great October Socialist Revolution

"A Device for Measuring the Time Intervals Between Adjacent Pulses of an Input Pulse Sequence"

Moscow, Otkrytiya, Izobreteniya, Promyshlennyye Obraztzy, Tovarnyye Znaki, No 12, Apr 72, Author's Certificate No 334542, Division G, filed 9 Jul 70, published 30 Mar 72, p 175

Translation: This Author's Certificate introduces a device for measuring the time intervals between adjacent pulses of an input pulse sequence. The device contains an input pulse shaper, a quantizing pulse generator, a coincidence gate, a pulse counter, a switch and a registration unit. As a distinguishing feature of the patent, the design is simplified by adding a delay unit whose first input is connected to the output of the switch, while the second input is connected to the output of the shaper. The first output of the delay unit is connected to the input of the coincidence gate, and the second output is connected to the input of the pulse counter.

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1/2 019 UNCLASSIFIED PROCESSING DATE--04DEC70  
TITLE--SODIUM POTASSIUM ACTIVATED ATPASE OF THE BRAIN AND ITS EXTRACTION  
AIDED BY DETERGENTS -U-  
AUTHOR--(03)-PALLADIN, A.V., KIRSENKO, O.V., VAVILOVA, G.L.  
COUNTRY OF INFO--USSR  
SOURCE--BIOKHEMIYA 1970, 35(2), 404-11  
DATE PUBLISHED-----70  
SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES  
TOPIC TAGS--BRAIN, DETERGENT, RABBIT, DAIRY CATTLE, ADENOSINE  
TRIPHOSPHATE, ENZYME ACTIVITY/(U)TRITON X100 DETERGENT  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRA--3009/0193 STEP NO--UR/0218/T0/035/002/0404/0411  
CIRC ACCESSION NO--AP0139056  
UNCLASSIFIED

2/2 019

UNCLASSIFIED

PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AP0139056

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. TRANSFER ATPASE ACTIVITY HAS BEEN STUDIED IN SUBCELLULAR FRACTIONS OF BRAIN ON SUCROSE D. GRADIENTS. CELLULAR FRACTIONS WERE OBTAINED FROM RABBIT AND CATTLE BRAIN BY THE WHITTAKER METHOD. ATPASE ACTIVITY WAS DETD. AS SIMPLE INORG. PHOSPHATE PER MG OF PROTEIN AFTER INCUBATION OF PREPNS. AT 37DEGREES FOR 15 MIN IN MEDIUM CONTG. 0.028M TRIS-HCL, PH 7.4, 0.001M TRIS-ATP, 0.001M MGCL SUB2, 0.150M NACL PLUS 0.015M KCL, AND 100-200 MUG PROTEIN IN 1.8 ML. TRANSFER ATPASE OF APPROX. EQUAL ACTIVITY WAS DETECTED IN FRACTIONS OF MICROSOMES, NERVE ENDINGS, AND MYELIN. IN THE MYELIN FRACTION, THE ATPASE WAS APPARENTLY BOUND TO THE OUTER CELL MEMBRANE. THE NONIONIC DETERGENT TRITON X-100 EXTD. ACTIVE ATPASE FROM THE MYELIN AND MICROSOMAL FRACTIONS, BUT NOT FROM THE NERVE ENDING AND MITOCHONDRIAL FRACTIONS. DEOXYCHOLATE DID NOT EXT. ACTIVE TRANSFER ATPASE FROM THESE FRACTIONS. IT IS SUGGESTED THAT THE LOW LEVELS OF PHOSPHOLIPIDS IN DEOXYCHOLATE EXTS. MAY ACCOUNT FOR THE ABSENCE OF ATPASE ACTIVITY. TRITON X-100 IS RECOMMENDED FOR EXTN. OF HIGH;Y ACTIVE ATPASE. FACILITY: DEP. BIOCHEM. NERV. SYST., INST. BIOCHEM., KIEV, USSR.

UNCLASSIFIED



USSR

UDC: 577.153.35

PALLADIN, A. V., KIRSENKO, O. V., and VAVILOVA, G. L., Division of the Biochemistry of the Nervous System, Institute of Biochemistry, Academy of Sciences UkrSSR, Kiev

"Na + K - Activated ATP-ase of the Brain and Its Extraction by Means of Detergents"

Moscow, Biokhimiya, Vol 35, No 2, Mar-Apr 70, pp 404-411

Abstract: The activity of Na + K - activated transfer ATP-ase in subcellular fractions from the brain of rabbits and cattle was studied. The fractions were separated from brain homogenates in a sucrose density gradient by applying a method described earlier (Ya. V. Eelik, et al, Ukr. Biokhim, Zhur. 41, 3, 1969; V. P. Whittaker, Biochem. J., 72, 694, 1959). Approximately the same transfer ATP-ase activity was exhibited by the fractions corresponding to microsomes, nerve endings, and myelin. The activity of the myelin fraction was apparently associated with the external cell membrane, not the membrane-free myelin. The non-ionic detergent Triton X-100 extracted active ATP-ase from this fraction and from microsomes, but not from the fractions corresponding to nerve endings and to mitochondria. Deoxycholate did not extract active transfer ATP-ase from any of the fractions mentioned. The protein extracted with deoxycholate from microsomes had

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PALLADIN, A. V., et al, Biokhimiya, Vol 35, No 2, Mar-Apr 70, pp 404-411

a much lower phospholipid content than that extracted with Triton X-100 from the same fraction - i. e., the two detergents extracted different parts of the lipo-protein membrane.

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USSR

UDC 621.316.722.1:621.382

KIRSEY, V. YA.

"Construction of Compensated Transistor Stepped-up Voltage Stabilizers"

Kiev, Poluprovodnikovaya tekhnika i mikroelektronika, No 5, 1971, pp 73-82

Abstract: The state of the art in the operation and construction of compensated transistor stepped-up voltage stabilizers and their functional elements is reviewed, and the available data in this field is classified. Construction difficulties and means of overcoming them are discussed. Some example circuit diagrams are presented for compensated transistor stepped-up voltage stabilizers operating at output voltages of 150 and 300 volts constructed considering the presented arguments and recommendations. Both circuit diagrams have medium class stabilization indexes and can theoretically stabilize a voltage of any magnitude by recalculating the resistors. The transient processes occurring in the stabilizer circuits when they are switched on and off, in the presence of voltage bumps in the primary circuit, under emergency conditions with short circuits and overloads, self-excitation, and so on are discussed. Formulas are presented for calculating the stabilizer circuits.

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USSR

UDC 541.182.2/.3:628.511.4

KIRSH, A. A., FUKS, N. A., Physical Chemistry Scientific Research  
Institute imeni L. Ya. Karpov

"Pressure Drop and Aerosol Deposition in a Polydispersed Fiber Fan  
Model Filter"

Moscow, Kolloidnyi Zhurnal, vol 35, No 5, September-October 73,  
pp 971-973

Abstract: Experimental data showed that the pressure drop and efficiency of diffusion deposition of highly dispersed aerosols in fan model filters consisting of polydispersed fibers can be calculated from the arithmetic mean of the fiber radius. The fibers used in the study were 0.043- to 0.31-mm-diameter polycaprolactan; the aerosols were 0.02- $\mu$ m-diameter selenium and dioctyl sebacate and were pulled through the filter at a rate of 1 to 10 cm/sec.

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